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This report constitutes Phase I of a two-part study; a Phase II report will discuss subject cataloging. Phase I is concerned with the materials of a library as individual records (or documents) and as representations of certain works by certain authors--that is, with descriptive, or bibliographic, cataloging. Discussed in the report are (1) the history, role, function, and objectives of the author-and-title catalog; (2) problems and principles of descriptive cataloging, including the use and function of "main entry", the principle of authorship, and the process and problems of cataloging print and nonprint materials; (3) organization of the catalog; and (4) potentialities of automation. The considerations inherent in bibliographic cataloging, such as the distinction between the "book" and the "work," are said to be so elemental that they are essential not only to the effective control of library's materials but also to that of the information contained in the materials. Because of the special concern with information, the author includes a discussion of the "Bibliographic Dimensions of Information Control," prepared in collaboration with Robert M. Hayes, which also appears in "American Documentation," Vol.20, July 1969, p. 247-252. (JW)

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Final Report

Phase I: Descriptive Cataloging

Prepared under a grant from the U.S. Office of Education

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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NOTE

This work was planned as a two-part study of the Principles of Cataloging. Phase I was to concern itself with the materials of a library as individual records (or documents) and as representations of certain works by certain authors--that is, with Descriptive (or Bibliographic) Cataloging; and Phase II was to concern itself with the same materials as sources of information on various subjects and their relations to other subjects--that is, with Subject Cataloging. The present report constitutes Phase I.

* * *

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PREFACE

In July 1966, at the ALA Conference in New York, a significant event in the history of cataloging--and particularly of Anglo-American cataloging--came to take place. At that Conference, which fortuitously began with an affirmation of faith in "The Future of the Book,"[1] and ended with a summons for "Masters of the Raging Book,"[2] a new code of cataloging rules designed to reshape and revitalize the library's control of its books and other materials was formally presented to the profession.

The presentation of this code, which was published the following spring under the title Anglo-American Cataloging Rules, marked the conclusion of an intensive and at times turbulent period of "catalog code revision" which had been ushered in thirteen years earlier, in June 1953, at the ALA Conference in Los Angeles, under the banner: ALA Rules of Entry: The Proposed Revolution![3] Since this revision of the rules of entry was in fact a continuation of the previous revision of the rules of description, its conclusion also brought to an end a quarter century of revision which originated in 1941. The publication in that year of the Preliminary American Second Edition of the A.L.A. Catalog Rules formed a watershed in American cataloging ideology, and "The Crisis in Cataloging"[4] which appeared in the same year was a harbinger of new directions and of the criticism and the revision that followed.

Although the revision began as a local activity, and the first part--the revision of the rules of description--was carried out almost entirely by the Library of Congress, the revision of the rules of entry--the most critical and complex aspect of bibliographic cataloging--soon engaged the participation of the Canadian and British Library Associations and the interest of many librarians throughout the world. As the revision progressed and the universal character of the new rules and principles, deliberately freed from parochial traditions and influences, became apparent, the long dormant hope for an international agreement on cataloging principles to facilitate international bibliographic communication was revived, and on October 9-18, 1961, an International Conference on Cataloging Principles was held at UNESCO in Paris. The spectacular agreement achieved by the fifty-three countries and twelve international organizations participating in that Conference is an outstanding landmark of progress in cataloging.

What distinguishes the new Anglo-American cataloging rules from the former ALA rules, is that they no longer represent an aggregation of decisions made separately in response to various questions which arose in the course of cataloging. Rather, they are an outgrowth of a searching inquiry into the purposes which the catalog of a library should be designed to serve, a systematic analysis of the problem of bibliographic cataloging, and a clarification of the principles which should underlie all the cataloging rules. The new code was thus conceived as an integral bibliographic system--although some regrettable "compromises" have unfortunately been made in the American version of the code because of prevailing cataloging conditions. A comprehension of the underlying purposes, problems, and principles is therefore prerequisite to an adequate understanding of the new rules, their effective application, and their further improvement. This is especially important at a time when large-scale bibliographic projects of regional, national, and even international scope are in prospect, and utilization of the potentialities of the computer in the preparation and exploitation of the library's catalog is in view. The purpose of this work is thus to contribute to an understanding of the nature of the problem of bibliographic cataloging and the principles involved.

The considerations inherent in bibliographic cataloging are, however, so elemental that they are essential not only to the effective control of the library's materials but also to that of the information contained in them. Because of the present special concern with the problem of information, this report includes also a discussion of the "Bibliographic Dimensions in Information Control." This discussion was prepared in collaboration with Dr. Robert M. Hayes, Director of the University of California Institute of Library Research, and was submitted for publication in American Documentation to bring it to the attention of those concerned with the problem of information. It is to appear in the July issue of that periodical.

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1. Ray, Gordon N. "The Future of the Book," ALA Bulletin 60:783-93 (September 1966).
2. Gaver, Mary V. "Masters of the Raging Book," Ibid. 60:794-99, 802-05 (September 1966).
3. "ALA Rules of Entry: The Proposed Revolution!," Journal of Cataloging and Classification 9:123-142 (September 1953).
4. Osborn, Andrew D. "The Crisis in Cataloging," Library Quarterly 11:393-411 (October 1941).

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THE AUTHOR-AND-TITLE CATALOG IN THE LIBRARY

The instruments of descriptive - or bibliographic - cataloging are generally found in the form of "Rules" or "Instructions" prescribing how the materials of a library should be "entered" and "described" so as to form a well-integrated and efficient catalog. These rules are necessary and important for three reasons: (1) to expedite the work of cataloging - by providing for the cataloger ready directions to follow; (2) to insure uniformity and consistency in the treatment of library materials - without which the catalog would tend to become increasingly chaotic and confusing; and (3) to facilitate bibliographic cooperation among libraries - and thus serve the cause of bibliographic and cataloging economy. But the very importance of these rules and of their observance tends to divert attention from the ends which they must be designed to serve and in light of which they must be interpreted, evaluated, and changed as may be required. To realize what these ends are to be, it is necessary to consider the role of the catalog in the library's operations and services, the general function of the catalog in context of the library's functions, and the specific objectives which the catalog is to serve in view of its role and function in the library.

The Role of the Catalog in the Library. The library has inspired many eloquent metaphors exalting its mission and importance. It has been described as the custodian of "the diary of the human race," "the shrine of man's intellect and wisdom," "the true university of these days," "a sanatorium of the mind," and more recently, in a contemporary idiom, as "the brain bank of the nation." The tributes have come from men in all walks of life, including the late President Kennedy who regarded the library as "the key to progress and the advancement of knowledge."[1] It is no doubt all of this. It has come to serve people of all ages and levels of education - as children's libraries, school libraries, college and university libraries; of various interests - as art libraries, law libraries, medical libraries, music libraries, technological libraries; of various areas - as local public libraries, county libraries, state libraries, regional libraries, national libraries; and of any combination of interests - as county law libraries, national agricultural and medical libraries. These libraries may differ also in other respects, including the kinds of services offered by them; but they all have in common the three basic functions of a library: the selection and acquisition of the materials required by their users, the preparation of catalogs of the materials acquired, and the provision of assistance in their use.

The first of these functions, which is fundamental to the essence of a library, involves (a) examination of announcements and of records of publications - including publishers', dealers' and other catalogs and bibliographies - and of the requests and suggestions of users, for desirable or needed materials; (b) searching of the library's catalog to determine whether or not the materials selected, or any other editions or translations of the works, are already in the library; and (c) ordering the materials selected which are not in the library in accordance with governing policies. Thus the first function of the library - the development of its collections - depends on its catalog, and the effectiveness of the catalog will affect that of the process of acquisition. An ineffective or unreliable catalog will take more time to search and may lead to costly duplication in purchasing and processing of materials already in the library.

If the first function is fundamental, the second - i.e., cataloging - is central to all the operations and services of the library. The role of the catalog in the process of acquisition has just been noted. The process of cataloging itself depends no less on the condition of the catalog into which the results of the cataloging process are to be incorporated. For the catalog is not, or should not be, merely an aggregation of freely produced entries of individual books and other items, as is sometimes assumed even by people who might be expected to know better, but a systematically designed instrument in which all entries, as component parts, must be properly integrated. Thus the catalog, embodying previous cataloging decisions, is at once both the result as well as an important tool of cataloging, and an effective catalog is as essential to the process of cataloging as it is to the process of acquisition.

The third function of the library - the provision of assistance in its use - depends more obviously than the other two functions on the effectiveness of the catalog. The assistance required normally involves the location of certain books, authors, or sources of information. These questions are similar in character to those arising in the processes of acquisition and cataloging, and the answers sought will similarly be affected by the condition of the catalog. The more effective the catalog - the more intelligible and responsive it is - the more frequently and readily will it yield the desired answers, either directly to the library's users or to the staff assisting them, thus saving doubly the time of the library's staff and users.

The critical importance of the catalog for those who administer as well as those who use the library has led Thomas Carlyle, as a library user, to testify that "A library is not worth anything without a catalogue - it is a Polyphemus without any eye in his head - and you must front the difficulties, whatever they may be, of making proper catalogues,"[2] and Ralph R. Shaw, as a librarian, to characterize the catalog as "that backbone of the library."[3] In view of this role of the catalog, one is well advised to be wary of certain "economies" or "short cuts" in its construction which are calculated to impair its effectiveness and thereby also the effectiveness of all the operations and services depending on it. Such economies may not only be offset by increased costs in the other operations and services of the library, but may also be detrimental to its whole purpose. This is particularly to be borne in mind in the case of cooperative or centralized cataloging, where an injudicious economy may impair at once the operations and services of many libraries.

The General Function of the Catalog. In approaching the problem of cataloging and the requirements which the catalog is to meet to be effectively helpful to its users, it is necessary to begin with a deliberate consideration of what is to be the general and basic function of the catalog, for the absence of a clarification of, and an agreement on, this function has historically led to controversies and disagreements on the specific objectives and methods of cataloging. This is interestingly illustrated in the experience of Sir Thomas Bodley who set out, at the turn of the seventeenth century, on a book buying expedition for the library which was to immortalize his name, with the aid of the catalog prepared by the then librarian of the University of Oxford, Thomas James. Like other catalogs of that day, James's catalog was intended primarily as an inventory list of the books on the shelves. For this purpose, his entries in the catalog were very informal and very brief, and books bound with other books were merely noted in the entry of the first book but had no separate entries in the catalog. This was apparently sufficient for James's purposes, but was understandably frustrating for Bodley who had to know, when considering books for purchase, whether or not those books were already in the library. He wrote James complaining and explaining that his failure to provide separate entries for books bound with other books will lead one to buy unnecessarily duplicate copies, and that his brief entries are insufficient to tell one what particular editions the library had.[4] But Bodley's criticism of James's cataloging methods was really predicated on a different view of the basic function of the catalog. Whereas James conceived of it as a list for use in taking inventory of the books on the shelves, Bodley wanted it as a record for use in determining whether the library had a particular book or edition.

A quarter of a millennium later--in 1847-1849--when, by an unusual coincidence of men and events, cataloging became a national issue and no less than a Royal Commission was appointed to hold public hearings on the cataloging rules adopted by Antonio Panizzi for the library of the British Museum,[5] the contest between what might be called the conservatives and the progressives in cataloging of that time again revolved largely around particular cataloging questions--such as whether a nobleman should be entered in the catalog under his family name or his title, the entry of anonymous publications, the treatment of periodical publications, and so on--but inevitably involved also the basic issue of the general function of the catalog. The conservative critics of the new rules maintained that all that was needed was a simple "finding-catalogue"--the meaning of which was reflected in Carlyle's assertion: "The grand use of any catalogue is, to tell you, in any intelligible way, that such and such books are in the library. ... I should expect it to be a simple thing enough to draw up a simple list of the names of the books..."[6] However, the progressive defenders of the new rules, and particularly Panizzi himself, were able to demonstrate spectacularly the simplism of their eminent critics' notions of the problem of cataloging-or, in Panizzi's words, "that the delusions which exist in the public mind with regard to the ease with which a complete catalogue may be made are wild and ludicrous,"-and the need of "a full and accurate catalogue."[7] But the essential difference between the "finding-catalogue" and the "full and accurate catalogue" remained vague and elusive. It was not easy to conceive of a "finding-catalogue" which was not "full and accurate," or of "a full and accurate catalogue" which was not also a "finding-catalogue." And a decade later Edward Edwards, reflecting on this discussion, commented: "But if there is to be any hope of general agreement as to what sort of catalogues may reasonably be termed 'proper,' we must try to set out with some clear and definite conceptions of the purposes which such catalogues are intended to subserve . . . Any one whose curiosity may induce him to 'read up' the discussion, will meet very frequently with a new phrase--that of 'finding-catalogue'--which, at the first blush, looks like a definition, but on closer scrutiny will probably be found of small help in the inquiry. In some sense, indeed, all catalogues must be 'finding' catalogues, or they are worthless, but the character of the catalogue which, (in that sense), merits the name will depend on the subject of the search."[8]

The wisdom of Edwards's advice struck a sympathetic chord in the mind of a young and eager cataloging apprentice, Charles A. Cutter, who was destined to dominate Anglo-American cataloging thought in the last quarter of that century, and whose influence continued strongly in the half century that followed. Reviewing later the cataloging works of his day, Cutter noted critically that they had not "attempted to set forth the rules in a systematic way or to investigate what might be called the first principles of cataloging,"[9] and his own rules began, as Edwards counseled, with a definition of the purposes which the catalog was to serve. The purposes, or "Objects," formulated by Cutter were:

"1. To enable a person to find a book of which either
    (A) the author
    (B) the title   } is known.
    (C) the subject
2. To show what the library has
    (D) by a given author
    (E) on a given subject
    (F) in a given kind of literature.
3. To assist in the choice of a book
    (G) as to its edition (bibliographically)
    (H) as to its character (literary or topical)."[10]

Cutter held steadfast to these "Objects," repeating them at the beginning of each of the three subsequent editions of his Rules, with a somewhat caustic footnote: "This statement of Objects . . . has been criticized; but as it has also been frequently quoted, usually without change or credit, in the prefaces of catalogues and elsewhere, I suppose it has on the whole been approved." However, the Anglo-American Catalog Rules of 1908, which succeeded and were based on Cutter's Rules, omitted the "Objects," and they have never since been reinstated.

The issue of what was to be the general function of the catalog in the library had, however, not been quite disposed of and was to emerge again. This occurred in the early 1930's when the 1908 Rules became ripe for revision and American libraries, in the throes of general economic stress, were driven to search for further economies in their operations and services. Cataloging, being the least understood and most criticized (not altogether without reason) library operation, naturally became a ready target of economy, and the ensuing argument, involving again the issue of the basic function of the catalog, echoed that of nearly a hundred years earlier, with "finding list" and "reference tool" slogans used in lieu of the earlier "finding-catalogue" and "full and accurate catalogue." The advocates of economy in cataloging argued, like their predecessors, that the function of the catalog was to be merely that of a brief and simple "finding list"--to help one find a book in the library--and that everything that was not necessary for that purpose should be expunged from cataloging. The sentiment for stringent economy was expressed in a demand that: "Practices with no stronger claim to continuance than that of tradition should be brushed aside. Academic precision that serves no better purpose than rendering homage to the god of completeness should be laid away."[11] On the other hand, the opponents of retrenchment in cataloging argued that "There is nothing on the catalog card that is not used by someone at some time,"[12] that "The catalog is the most important reference tool in the library," and that economies in cataloging will only entail increased reference costs and reduced services which together will more than offset the savings sought. To illustrate the reference use of the catalog, the Reference Librarian of the Columbia University Libraries related how she had once observed a reader "almost wearing a path from his seat in the reference room to the card catalog." Upon investigation, she found that he was using the catalog to locate, not books, but the dates of authors, which he needed to know in connection with an examination for which he was studying. Even more interesting was her story about a telephone call she once received requesting her to check the catalog to find whether Columbia had a certain book in an edition less than 15 centimeters in height. The caller, it turned out, was a literary editor engaged in reading the manuscript of a novel submitted for publication. At one point in the novel, the hero, who was represented as reading a well-known work, was interrupted and hastily put the book in his pocket. The editor was curious to know whether the author of the manuscript was careful about his facts and wanted to verify whether that work was published in a pocket-size edition. Again, the caller did not want the book itself, he only wanted the information about the book, and the Reference Librarian was able to supply him the needed information instantly thanks to the completeness of the catalog.[13] Another Reference Librarian, of the University of Chicago Libraries, went further in asserting without qualification that "The card catalog is one of the richest and fullest reference tools that the reader can use," indeed, the "key to all knowledge," and went on to praise the catalogers' painstaking in supplying obscure bits of information: "In some mysterious way the members of the catalog departments of our great libraries are splendid sleuths and can unearth and put on catalog cards for the use of future generations such personal items as middle names, former and present husbands' names, or degrees of royal rank. Even though the person concerned hoped to keep the date of his birth from being broadcast to the world, these cataloging experts can usually find it . . . and will put it on the catalog cards for posterity to see."[14] And to demonstrate the potential value of such data, she proceeded to compile a biographical sketch of R. R. Bowker, based solely on the catalog entries under his name and showing "some of his interests, some of the organizations to which he belonged, and some of his friends."[15] Commenting on this debate, one thoughtful librarian observed: "Rather curiously . . . as a profession, we seem never yet to have agreed upon a fundamental cataloging policy . . . As librarians we are in profound disagreement as to what a library catalog should be and as to what it should do. On the one side are . . . [those] who look upon it as an end in itself, a reference tool which might conceivably be of very great use even if no library existed behind it at all. And, on the other side, are . . . [those] who say that the catalog is not to be developed as of itself but only as a means to an end, that end being solely to put the reader, easily and quickly, in touch with the book that he seeks."[16] And in support of the latter view he quoted sympathetically Professor Branscomb's judgment that "Catalogs were created to inform readers what books the library possesses and where they are; their basic purpose in other words, is to serve as finding lists"[17] - a clear echo of Carlyle's testimony which Panizzi had so brilliantly and convincingly exposed as deficient nearly a hundred years earlier.

The concepts of the catalog as a "finding list" and "reference tool" proved little more constructive than those of the earlier "finding-catalogue" and "full and accurate catalogue," and for similar reasons. The "finding list" notion appeared attractive because it lent the catalog a definite focus - the books in the library - but the focus was recognized as too narrowly limited to "books" as concrete objects and ignoring the relationships of the works embodied in them which, in the last analysis, is the focus of the user's interest. On the other hand, the "reference tool" notion suggested for the catalog an unlimited focus -

including everything that might be "used by someone at some time" - an extravagant notion that could not be seriously entertained even if cataloging were immune from considerations of economy. Obviously, the catalog was significantly more than a "finding list" and considerably less than a general "reference tool," but the proper definition of its function was yet to come. It came, as the cataloging profession was perplexed and buffeted about between the adherents of the "finding list" and the "reference tool" catalogs, in a discourse presented to it by one who spoke from many years of reflection on bibliography, librarianship, and scholarship. Viewing cataloging, as it must be viewed to be fully understood, in the context of the "Bibliographical Function of the Library," Pierce Butler explained: "Bibliography is the systematic process by which civilized man finds his way about in the world of books that he has created. A catalog is a bibliography of the books in a particular collection."[18] The essence of Butler's message was that the function of the library is not only to acquire for its users the materials they need, but also to provide the "bibliographical" guidance they require to help them make optimum use of these materials - which, after all, is the ultimate purpose of the library; and in furtherance of this purpose, the catalog must be designed to function, not as "a simple list of the names of books" showing "that such and such books are in the library" - as Carlyle had suggested and many others have since innocently assumed - but as a helpful guide to the library's resources. As such, the catalog need not include all kinds of information about an author or a book cataloged that might be "used by someone at some time," as the "reference tool" advocates implied, but only that which is relevant to and helpful in one's use of the library's resources; on the other hand, it must not be limited to telling one only "what books the library possesses," as the "finding list" advocates contended, but go beyond that and call his attention to related materials in the library which might be pertinent to his interest and thus help him to utilize more fully and adequately the library's resources.

The Objectives of the Catalog. The concept of the catalog as a guide designed to tell an inquirer not only whether the library has the particular book he wants, but also what related materials it has that might well serve his purpose, implies that the materials of a library have significant aspects by which they can be related to enhance their effective use. What, then, are these aspects?

Contemplating the most typical of library materials - the book - and its use, one is led to recognize two distinct and important aspects. One is the origin and identity of the book as a phenomenon, entity, or product; and the other is the character of its contents as on a particular subject or of a particular type. The former is referred to as the "bibliographical" aspect of the book, and the latter as its "subject" aspect - though the terminology leaves much to be desired. It will also be observed that those who come to consult the catalog are normally either after particular books, of particular authors or titles, or after books on a particular subject or of a particular type - that is, the users of the catalog exhibit either a "bibliographical" or a "subject" interest in the materials sought by them.

The problem involved in providing for the subject needs of the catalog users is the province of "subject cataloging" and "classification," which are beyond the scope of this study. The provision for the users' bibliographical needs requires a prior consideration of the genetics of library materials - as exemplified by the book.

The book, it should be noted, comes into being as a dichotomic product - as a material object or medium used to convey the intellectual work of an author. Because the material book embodies and represents the intellectual work, the two have come to be confused, and the terms are synonymously used not only by the layman but also by the cataloger himself. Thus catalogers refer to the author and title of a book instead of, more accurately, to the author of the work and *the title of the book embodying it*, and the inquirer searching the catalog for a *particular book* is more often than not after *the work* embodied in it, although he is very likely unaware of the distinction between the two. But the distinction between the *book* and the *work* is not purely an academic one. It is, rather, of basic importance to an understanding of the nature of the problem of cataloging and of the objectives which the catalog should be designed to serve. This is due to the fact that the existence and the vicissitudes of the *work* are not confined to any particular *book*; that the book is actually only *one particular edition*, or representation of the work embodied in it - which may be found in the library in various editions of special interest (as first, latest, well edited, illustrated), in various translations, in various media (as books, tapes, discs), and sometimes, in addition, under different titles or different names of the author. The question that must then be faced at the outset - and that has been faced since Panizzi, though beclouded by the failure to distinguish clearly and consistently between the *book* and the *work* - is whether the objective of the catalog should be merely to tell an inquirer whether or not the library has the *particular book* he is looking for, or whether it should go beyond that and tell him also what other editions and translations - or other representations - of the *work* the library has so as to help him more effectively to determine whether the library has what he needs and to select what might best serve his purposes. The answer to this question is necessarily to be found in the library's general function. If, as Butler maintained and as has been increasingly recognized, the function of the library is to provide for its users not only the materials needed by them but also the "bibliographical" guidance they require to help them make optimum use of the materials, then the catalog will have to be made to tell an inquirer in search of a book not only whether the library has that book but also what other editions and translation of the work the library has.

The interrelation between the various representations of a work - as editions or translations - is an immediate and intimate one; but there is yet another "bibliographical" relation of both direct and indirect interest to many catalog users: it is the interrelation between the works of an author. To show what works the library has of a particular author is of direct interest to many users concerned, not with any particular book or work, but rather with a particular author who may be represented by his works in the library. Indirectly, this is of interest to many more users who are uncertain, or may have an inaccurate citation, of the title of the book or the work they want, but could recognize it in a list of the author's works. In fact, only such a list makes it possible for one to determine with certainty whether or not the library has a particular work of a certain author. It is probably in recognition of these facts that the major codes of cataloging rules since Panizzi have generally provided for the catalog to show what works, or "books," the library had of a particular author, although the means they employed to accomplish it have not been the same.

In summary, then, it must be recognized that, genetically, a book is not an independent entity but represents a particular edition of a particular work by a particular author; and that, consequently, it may be of interest to different users either as a particular edition, or as a representation of a particular work, or as a representation of the work of a particular author. If all these users are to be served - and it is further realized that even those who look for a particular book would generally better be served if informed at the same time of the other editions of the work and of the other works of the author which the library has - then the book will have to be represented in the catalog as an edition of a particular work by a particular author and related to the other editions (and translations) of that work and to the other works of that author. This is the essence of the objectives evolved in the preparation of the new Anglo-American Cataloging Rules and subsequently adopted by the International

Conference on Cataloging Principles. In the "unfinished draft" of the former they read:

> "The objectives which the catalog is to serve are two:
>
> First, to facilitate the location of a particular publication, i.e., of a particular edition, of a work, which is in the library.
>
> Second, to relate and display together the editions which a library has of a given work and the works which it has of a given author."[19]

In the Report of the latter they are reworded to read:

> "The catalogue should be an efficient instrument for ascertaining
>
> 1. whether the library contains a particular book . . . and
> 2. which works by a particular author and which editions of a particular work are in the library."[20]

Comparing these objectives with the corresponding "Objects" of Cutter cited above, it will be noted that the first objective "to facilitate the location of a particular book" is substantially identical with Cutter's "To enable a person to find a book." The use of the phrase "to facilitate" for Cutter's "To enable" was intended to emphasize the choice of cataloging methods which not only enable but facilitate the location of the material sought. The emphasis was directed at such former rules as those which prescribed the entry of an author under his full and real name instead of the name by which he is commonly identified in his works as provided in the new rules. The former enabled a person to find the author desired in the catalog, but often by means of references to the full and real name; the latter is intended to facilitate the location of the author by using the name under which he is most likely to be looked for. The second objective, however, is significantly different in specifying the editions of a work and the works of an author for Cutter's vague what the library has by a given author. Cutter's unqualified what is expressive of the failure to distinguish clearly and consistently between the book and the work in his rules, and characterizes also the old Anglo-American rules which were based on them; and the differences noted between Cutter's "Objects" and the objectives evolved in the preparation of the new Anglo-American Cataloging Rules reflect some of the fundamental differences between the old and the new Anglo-American Cataloging Rules.

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DESCRIPTIVE CATALOGING:
PROBLEMS and PRINCIPLES

The questions arising in the process of cataloging a seemingly unending variety of library materials are many and have caused a continuous proliferation of rules in Anglo-American cataloging. This growth, which began with Panizzi's famous ninety-one Rules published in 1841[1], decried at the time as too numerous and complex, continued through the four editions of Cutter's Rules published between 1876 and 1904[2], the Catalog Rules of 1908[3] which replaced them, and culminated in the A.L.A. Catalog Rules of 1941[4], fortuitously the centenary of Panizzi's Rules. The complexity and inconsistencies which characterized the 1941 rules now threatened the economy of cataloging and the effectiveness of the catalog, and evoked the cry of "Crisis in Cataloging"[5] and a call for a "pragmatic" reevaluation and revision of the accumulated rules. The response to this call began with a cautious examination and then revision of the rules of "Description,"[6] the simpler aspect of cataloging, and the success of this work subsequently led to a similar investigation and revision of the rules of "Entry,"[7] the critical and complex aspect of cataloging. The result of this revision, which was completed and officially presented to the American Library Association and the Library of Congress in 1966--exactly a quarter century after the appearance of the A.L.A. Catalog Rules of 1941 which sparked the revision--was published early in 1967 as the new Anglo-American Cataloging Rules.[8]

What is most significant about the character of the revision--of the rules of "Entry" as well as the rules of "Description"--and distinguishes best the new Anglo-American code from the former cataloging rules, is the systematic approach to the problem of cataloging. Beginning with the axiom that a catalog must be designed to serve certain purposes related to the operations and services of the library, and that the rules must be designed to produce such a catalog, the revision set out first to determine these purposes and the questions they raised. An examination of the library's operations and services on the one hand, and of the library's most typical resource--the book--on the other, led to the conclusion that an effective catalog must serve

> First, to facilitate the location of a particular book, or item, which the library has, and
>
> Second, to reveal to the catalog user what other editions, translations, or representations the library has of the work, and what works it has of the author.[9]

These were then adopted as the basic objectives of the catalog, and these objectives were later confirmed also by the International Conference of Paris.[10]

Use and Function of Main Entry. Proceeding from these objectives to the problem of cataloging, it will soon be noted that the first objective alone--to facilitate the location of a particular book in the library--will often require more than one entry for a given book, because some people may be familiar with the author, or may be directed by a citation to the author, and will therefore look for the book under the author's name, while others may be uncertain of the author's name or its spelling, or may remember best the title of the book, and look for it under its title. Still others may be interested in the book because of its editor, translator, or illustrator and look for it under their names. If the interests and needs of all or most of the users are to be served, obviously multiple entries will often have to be made for a given book--under its author, title, editor, translator, or illustrator. Thus the first methodological question arises. Should the multiple entries be formed by permuting the elements of the entry--as author-title-illustrator, title-author-illustrator, illustrator-author-title? Or should only one entry be made--a "main entry"--which would include all the necessary data about the book or source, with references from the other elements under which the item may be sought to direct the reader to the main entry? Or, still, should one basic or unit entry be made in multiple copies which might then be supplied with the necessary headings to form all the desirable entries? All these methods, and some combinations, may be found and have been considered.

The first method--permuting the elements of the entry--characterizes the primitive catalog whose objective was limited to the location of individual books in the library. It may still be found in informally constructed catalogs and indexes likewise concerned only with the location of individual books. The following entries from British Books in Print, 1968, subtitled "the reference catalogue of current literature," illustrate this method:

Linden, R. O. Books and Libraries
Books and Libraries (Linden)
Libraries, Books and (Linden)

Obviously this method will serve only the first but not the second objective set forth before.

The second method--using one full main entry and as many and as brief references to it as may be deemed necessary and sufficient--may be described as the classical style typified by the British Museum catalog. The following entries from this catalog (Photolithographic Edition, 1959-1966) illustrate this method:

**The Big Books. See Strang (Herbert) pseud.

**Strang (Herbert) pseud. [i.e., George Herbert Ely and
C. J. L'Estrange.] The Big Books. Edited by H. Strang.
Humphrey Milford: London [1923--]

* * *

**Boulle (Pierre) The Bridge on the River Kwai.
See infra: Le Pont de la rivière Kwai.
**[Le Pont de la rivière Kwai.] The Bridge on the River
Kwai. Translated . . . by Xan Fielding. [A novel]
pp. 170. Seiker & Warburg: London, 1954.

**Fielding (Xan)

. . . .

--See Boulle (P.) [Le Pont de la rivière Kwai.]
The Bridge on the River Kwai. Translated . . .
by X. Fielding. 1954.

This method has two important advantages--one economic and the other functional. The use of references in lieu of additional entries, as will be noted particularly from the first example, makes possible an economy of space--an important consideration in itself in a large, bulky, and fast growing printed catalog--as well as an economy in the cost of production of the catalog. At the same time, the use of one main entry, as illustrated by the second entry under Boulle (Pierre) makes it possible to design it in such a way as to bring together, in one place in the catalog, all the editions and translations of a work and all the works of an author--which is the second objective of the catalog. The reader consulting this catalog for Boulle's Bridge on the River Kwai is directed to look under the original title, where he will find listed together all the editions and translations which the library may have of that work, as well as the other works of that author--although this has not been carried out in the British Museum catalog without qualifications. The main entry is thus designed not merely as the representation of a particular book as such, but as the representation of a book as an edition of a particular work by a particular author--thus forming a bibliographical nucleus of a systematically constructed catalog.

The third method--using one basic or unit entry in multiple copies supplied with the necessary headings to form all the desired entries--characterizes the modern card catalog generally found in American libraries. Here the use of brief references would seldom reduce the number of cards required and consequently would not affect the bulk of the catalog, and the cost of providing a special reference would generally be higher than that of adding a desired heading to one of the copies of the basic or unit entry, which is normally mechanically reproduced or purchased in multiple copies. Thus considerations of economy favored the use of added entries, in place of the references used in the printed book catalog, whenever this could be done. Furthermore, it was also widely felt that the use of added entries would be more helpful to the catalog user, because he would then find what he was looking for where he looked for it first--say, under the title of the book--instead of finding a reference to look for it elsewhere. But this view ignored the fact that the basic purpose of the reference was not merely to help one find the book--or source--he was looking for, but to help him find it in the context of the other editions and translations of the work and of the other works of the author which the library had, while the added entry was calculated to stop and divert him short of his goal.

It should be noted, however, that the third method evolved not as one basically different from the second method, but rather as a technological modification of it--continuing the use of a main entry, but using the main entry also as the unit entry to form added entries in lieu of the references of the second method wherever possible. Inasmuch as the classical function of the main entry--or "the entry"--had never been clearly set forth and generally understood, its use as the unit entry came to be regarded progressively as its principal function, and the idea of the "main" entry as such, together with the complex rules developed to determine how it is to be chosen in a variety of circumstances, came to be regarded increasingly as a technological anachronism. This notion gained considerable interest and impetus with the introduction of automation in cataloging when some maintained that, if the idea of a "main" entry were recognized as obsolete and abandoned, only a basic description of an item with the necessary headings would need to be provided, from which all the desirable entries might then automatically be produced by an appropriate computer program. Of course, if the main entry were really unnecessary for any other purpose, the process of cataloging could substantially be simplified, whether automated or not. But the critics of the main entry were apparently oblivious of the objectives which the main entry was originally intended to serve and which were the subject of three working papers at the International Conference of Paris.[11]

Principle of Authorship. The use of a main entry to represent a publication not as a distinct entity but as an edition of a particular work by a particular author, and so as to relate it to the other editions and translations of the work and to the other works of the author, requires that the main entry should be under the author's name, followed by a title chosen to designate the work (as discussed later) and a description of the publication itself containing the work (also discussed later) as illustrated by the main entry under Boulle (Pierre) above. It should be noted that this form of main entry will cause the works of an author and the editions and translations of a work to appear together in the catalog not only under their main entries, but also under their added entries--for editors, translators, subjects, etc.--when these are based on the main entry as the unit entry. Hence the first and basic rule in the original Anglo-American Catalog Rules of 1908, and in all subsequent editions since--with minor variations in wording -- has been "Enter a work under the name of its author," meaning that the main entry should be under the author of the work. Since this "principle of authorship" was to be of cardinal importance in cataloging, the need of a definition of the concept of authorship was recognized, and the definition provided in the 1908 rules stated that the "author" was:

> "1. The writer of a book, as distinguished from translator, editor, etc.
>
> 2. In a broader sense, the maker of the book or the person or body immediately responsible for its existence . . ."[12]

The first part of the definition was understandable; but the second part, requiring a determination of "the person or body immediately responsible for [the book's] existence" often confronted the cataloger with a dilemma and gave rise to considerable controversy and growing confusion. Given a book such as a posthumous edition of the letters of a person painstakingly collected by a friend and prepared by him for publication with an informative introduction--who was to be regarded as "immediately responsible for [that book's] existence"? The writer of the letters, or the friend who brought that collection into being? Or take a bibliography compiled by a library staff member, at the direction of an officer of the library, and as part of that member's duties in the library--or, in general, a work produced by one engaged and paid to do it--who was to be regarded as "immediately responsible for [that work's] existence"? The more one contended with this definition--which despite its ambiguity remained intact through the 1949 edition of the rules--the more it appeared complex, indeterminable, and irrelevant! To remedy the situation, the 1949 edition added, after the first "General rule" prescribing that the main entry of a work is to be "under the name of its author," the following important elucidation:

> "The author is considered to be the person or body chiefly responsible for the intellectual content of the book, literary, artistic or musical."[13]

The explanation was undoubtedly well intended. It was apparently meant to imply that the author is really not the person responsible for the existence of the "book"--for which the editor or publisher might often be regarded as "immediately responsible"--but the person responsible for the _intellectual_ product which forms the _content_ of the book; that is, the author is the person responsible for the _work_ contained in the book. But the phrase "intellectual content," though intriguing, conveyed an ambiguous and quite elusive meaning, and thus failed to clarify substantially the concept of authorship. Reaching further for a clarification, the new Anglo-American code of 1967 combined and refined the previous definition and elucidation to read:

> "_Author_. The person or corporate body chiefly responsible for the creation of the intellectual or artistic content of the work, e.g., the writer of a book, the compiler of a bibliography, the composer of a musical work, the artist who paints a picture, the photographer who takes a photograph."[14]

On analysis, however, there is little improvement to be found in this version. It is difficult to see any significant advantage in the phrase "intellectual or artistic content" over the previous "intellectual content," both equally ambiguous; or in the phrase "responsible for the creation of the . . . content" over the previous "responsible for the . . . content," both equally difficult to determine. What is more, the phrase "intellectual or artistic content of the work" suggests a meaning like "the intellectual substance, or the ideas, of the work." Does it mean, then, that the author is to be considered to be the person responsible for the ideas embodied in the work? The thought is not without interest or value and, indeed, may be traced in some of the former rules--such as those prescribing that epitomes, adaptations, and similar works should generally be entered under the name of the original author; but is it a plausible objective of practical day-to-day cataloging? Considering the examples illustrating the definition, a much simpler notion of authorship appears to have been intended. "The writer of a book, the compiler of a bibliography, the composer of a musical work, the artist who paints a picture, the photographer who takes a photograph"--all these suggest that the author is simply the person who produces a work, whatever the character of the work, whether or not it has any "intellectual or artistic content," and whoever may actually be "chiefly responsible for the creation" of that content.

The hiatus between the definition and the examples are bound to continue the ambiguity of the concept of authorship and the difficulties and inconsistencies that have characterized the determination of the main entry in Anglo-American cataloging. There is an obvious need of a more practical and realistic definition. Before attempting one, however, it is important to diagnose the difficulties of the present and the previous definitions.

These may be traced to two sources. The first, which has been a primary cause of confusion in Anglo-American cataloging and unfortunately has not been completely removed from the new rules, is, as already noted, the failure to distinguish clearly between the book and the work contained in it, and to follow through with the implications of this distinction. Had this distinction been recognized and carried out in the 1908 rules, and the word "work" properly and meaningfully used in the definition of "Author" instead of the word "book" actually used in it,--i.e.:

> "In a broader sense, the maker of the work or the person or body immediately responsible for its existence"--

a good deal of the tortuous course of the definition and of the confusion which it entailed would undoubtedly have been avoided. It would have been understood from the outset that, in determining the author, one is concerned not with the person who produced the book or edition in hand, but with the person who produced the work contained in it, which may be found in various editions and translations. Thus in returning to the collection of letters mentioned before, one would be concerned in determining the author or the main entry, not with who produced the collection in hand, but with who produced the letters which are contained in the collection and which may also be found in other editions and translations.

The second source of trouble has been the word "responsible" used in the definition of authorship. Recalling the bibliography mentioned before, who is to be regarded as "chiefly responsible" for it: the bibliographer who compiled it or the institution which caused him to do so? The course adopted in such circumstances involved considerations such as caused Hanson to brood: "Why bother our heads about such a trifling matter as whether Mr. Childs did a given piece of bibliographic work on his own time and at his own expense, and accordingly to be entered under his name; or on government time and at government expense, and therefore to be entered under the institution which pays him a salary"?[15] Similar problems arise in the case of a report prepared by one engaged to do it but issued in the name of another person or of a corporate body, a speech written by one but delivered by another in his own name, the "autobiography" of a person actually written for him by another person, and so on. In all these and similar cases, who is to be regarded as "chiefly responsible": the one who actually created the work or the one in whose name it was issued? The existing definition, expressing the temper of the cataloger, implies that the person who is actually "responsible for the creation" of a work should be regarded as the author; but to do so in such cases would be flying in the face of overwhelming reality, and special rules had to be provided to countermand the definition in such circumstances. This, however, points up a very important fact of life that must be recognized in cataloging and must qualify the definition of authorship. This fact was, interestingly, best explained by Winston Churchill who reportedly once brought a draft to King George VI for use as a Speech from the Throne. When the King reflected wistfully upon his delivery of a prime-ministerial statement as a Speech from the Throne, Churchill is said to have replied sensitively: "Your Majesty, anyone can write a check, but only the one who signs it can validate it." In cataloging, too, it must be recognized that it is really not "the writer of a book" or the creator of a work who will generally be regarded as the author, or the one "chiefly responsible" for it, but the one who lent his name and authority to it--the one represented as the writer of the book or as the creator of the work, who presumably formally assumed responsibility for it. Thus, returning to the above-mentioned bibliography, the cataloger need not engage in any such broodings as Hanson's to determine whether the bibliographer or the library is to be considered "chiefly responsible" for it, but observe only who is represented as responsible for it. There are, of course, some cases of works erroneously or fictitiously misrepresented as the works of certain authors, and the cataloger need not knowingly contribute to this misrepresentation. There are also some works purporting to convey spiritual communications which the cataloger might hesitate to attribute to the departed souls and prefer to regard the communicator rather than the purported spirit as responsible for the communication. But excepting such cases of established inaccurate or questionable attribution, the person represented as chiefly responsible for the work must realistically be regarded as its author. Thus the "author" might practically be defined as:

> The person or corporate body represented as chiefly responsible for the work, i.e., the one in whose name the work is issued and who is purportedly responsible for it--whatever the character of the work or the medium containing it--except when one has erroneously, fictitiously, or dubiously been represented as the author of the work; e.g. .... .

* * *

The phrase "whatever the character of the work or the medium containing it" is deliberately added to specify that these are not to be regarded as qualifications of authorship. There is no apparent logical or practical reason why they should be. Nor does the existing definition imply the exclusion of any works or media. Actually, however, not all men and media are treated alike. One category of people tacitly excluded from considerations of authorship are performers. Thus, for example, while a recording of Abba Eban's speeches may be found in the Library of Congress catalog under his name, as author of the speeches:

Eban, Abba Solomon

Abba Eban's U.N. Speeches on the Middle East Crisis [Phonodisc]

the recording of Leonard Pennario's artistry on the piano will not be found under his name but under the title of the recording:

The Best of Leonard Pennario in Stereo [Phonodisc]

The reasoning behind this discrimination is that the speeches delivered by Eban are his work, but the music performed by Pennario is not his work but that of various composers. This reasoning would be tenable if the music performed by Pennario had been that of a particular composer, as is Schumann's Piano Concerto in A Minor performed by him. In that case the recording would normally be represented as a rendition by Pennario of the work of Schumann (analogous to an edition or a translation of the work of a certain author) and the main entry would then appropriately be under the composer with an added entry for the performer. In the absence of any particular composer, however, it would seem that the recording could only be construed as exhibiting the work--the artistry--of Pennario, as is also implicit in the title The Best of Leonard Pennario, and the main entry should be under Pennario (analogous to the entry of translations of works of various authors by a certain translator under the name of the translator). Again, the denial to performers of the status of authorship is ignoring realities. If "the photographer who takes a photograph," as cited in the new definition, is an example of authorship, can it seriously be maintained that taking a photograph is more of an original and creative act than is performing a musical composition? It seems that the failure to recognize the work of performers is due primarily to an unconscious bias for "the book." Anything that can be put in the form of a book--photographs, chess games, calligraphy--is a product of authorship. The art and artistry of a singer, violinist, or pianist, cannot be conveyed by the medium of the book; hence, their works are orphans--they have no authors. They can be and are related in the catalog indirectly by means of added entries under the performers' names, but the main entries are under the titles. The consequence is that under the subject or other added entries the works of performers will be separated by their titles. For example, under the subject heading Piano Music one will find together the works of a composer, because he is treated as author of his works, but not the works of a performer, because he is not so treated. These will be separated by their titles, as

The Best of Leonard Pennario

among the various entries under B, and

Pennario Plays Just for Fun

a distance away among the entries under P. This does not contribute to the systematic structure of the catalog or its effective use.

Another category excluded from the principle of authorship in the Anglo-American rules are the works conveyed by means of motion pictures or filmstrips. In this case, it is no longer the authorship of the work that determines the main entry, but the medium--the fact that it is in the form of a motion picture or a filmstrip. The mere use of a film by one to convey and illustrate more effectively his ideas appears here to minimize his status as author. The rule governing the entry of works on film is brief and unqualified: "A film is entered under the title under which it is released."[16] Note the words "A film is entered," not "A work on film is entered," to denote that, in this case, the entry is determined by the character of the medium, not the character of the work--a complete reversal of the principle of authorship. True, the work embodied in the film and the person responsible for it are not altogether ignored. They are taken care of by another rule providing that an added entry is to be made for "the individual or individuals largely responsible for the subject content of an educational film--such as a lecturer, artist, or musician who is expressing his ideas, his art, or his music through the film medium."[17] But the main entry is still to be made for the film itself, as such, which is identified by its title. Thus, again, a presentation of Abba Eban's speeches in the form of a book which could be read, or a recording which could be played and heard, will be entered under Eban's name as the author of the speeches; but the mere use of a film to enable one to see and hear Eban deliver his speeches will cause the film to be entered under its title, not under Eban's name as the author of the speeches conveyed by the film. While the film will still be found under Eban's name in the catalog as an added entry, it will be separated from the other editions of the speeches under the subject and the other added entries, as already explained before. The editions of Randall Jarrell's poetry, and recordings of readings of his poetry, will be found together in the catalog under his name as the author of the poems; but the film showing him reading and explaining his poetry will not be found in the catalog among these works. The main entry will be found under the title of the film

Mr. Randall Jarrell (motion picture)

. . . .

and an added entry will be found under his name as the subject, not the author, of the work recorded on the film. These two exceptions--of the works of performers and of works recorded on film--are calculated to impair the systematic structure of the catalog which the consistent use of a main entry based on the principle of authorship was intended to serve. This is especially detrimental at a time when the audiovisual materials comprising these two categories of works are on the ascendance, both in quantity and importance, in the library.

Process and Problems of Cataloging. With the objectives of the catalog in view, the main entry as a means, and the principle of authorship as a method to accomplish the objectives, the process of cataloging will normally involve the following steps:

1. Determination of "the entry"--i.e., selection of the person, corporate body, or title under which the main entry of a work should be made--and of the necessary added entries.
2. Determination of the name and the form of the name by which the person or corporate body should be identified in the catalog, the qualification of the name when required to distinguish it from similar names of other persons or corporate bodies, and the manner in which that name should be entered in the catalog so that it will most readily be found by those who will look for it.
3. Determination of the title by which the *work*, as distinct from the *book*, should be identified, and by which all its editions and translations, as well as other works in any way related to it, will be brought together in the catalog.
4. Description of the material cataloged--i.e., description of the book, film, tape, recording, or other medium containing the work.
5. Treatment of publications of corporate bodies.

The procedures to be followed in all these steps must be deliberately calculated to produce an integrated catalog which will serve best the catalog's objectives, i.e., (1) to facilitate the location of a particular book or item recorded in the catalog, and (2) to reveal to the catalog user in the same place in the catalog what editions, translations, and other representations the library has of that work, and what works it has of that author.

1. *Entry of Work*. The entry of a work under the person or corporate body represented as chiefly responsible for it--except when known that the attribution is erroneous, fictitious, or dubious--is most widely accepted and followed in modern catalogs as one designed to serve best both objectives of the catalog. Even the early catalogs which were concerned with the first objective only--to help in the location of a book in the library--

evidenced a predilection for entry under the author's name. Jefferson's entries "Collier's historical dict." for The Great Historical, Geographical, Genealogical and Poetical Dictionary . . . by Jer. Collier, and "Deane's intercepted letters" for Paris Papers, or Mr. Silas Deane's Late Intercepted Papers[18] . . . are typical of the entries in the early catalogs. There was an apparent distrust of the title of a book as a guide to its location, because the title was subject to abbreviation and manipulation, as Jefferson's own entries illustrate. In the modern catalog, the main entry under author is, additionally, essential to the second objective--to bring together the works of an author and the editions of a work under all relevant entries: the author, editor, translator, title, subject, and any other added entries.

But not all works are represented as ones for which a certain person or corporate body is chiefly responsible, and these have always been and continue to be a source of controversy and confusion. They include the following categories:

a. Works produced by a compiler or editor from the writings or the contributions of other authors. Examples of the former are anthologies, collections, readings, and similar publications produced from existing works of various authors, known or unknown, to form a convenient source of information on some subject or a selection of representative works. Examples of the latter are new works produced from the contributions of various authors invited to participate in them. In both cases, the compiler or editor may not have contributed any part to the contents of the work--except, presumably, his planning, selection of the material, composition, and editing of the work. Is the compiler or editor to be regarded in such cases as "chiefly responsible," because he has brought a new work into being, or is he to be regarded merely as an accessory, because he is not, and is not represented as, the author of the contents of the work? The German school of thought generally denied the compiler or editor the status of authorship (although with some qualifications) and entered such works under their titles with added entries or references under the compilers or editors. The Anglo-American school of thought, however, considered the compiler and editor in such cases as quasi authors, and prescribed the entry of such works under the compiler or editor. The International Conference on Cataloging Principles, which achieved a remarkable agreement on all other points, was sharply divided on this issue.[19] In this case, however, the Anglo-American view can be demonstrated to be better calculated to serve the two objectives of the catalog than the German view, the considerations being similar to those which favor the principle of authorship.

In the treatment of such works, however, it is important to distinguish between those edited and compiled by the editor named, i.e., works actually brought into being by him, and those edited but not compiled by him, i.e., works brought into being by other known or unknown compilers, or by the collaborators themselves. Because works of the latter kind may be edited separately by various editors, entry under their respective editors would serve to scatter the editions of such works in the catalog. An interesting illustration of this consequence was provided by the early editions of the Dead Sea Scrolls. Puzzled initially by the question of how to enter these editions, some catalogers decided uncritically to treat them as collections of miscellaneous writings produced by the editors, and entered them under their respective editors. Then, realizing that this treatment was going to separate the editions of the same scrolls in the catalog, and also that persons looking for any edition of the scrolls but not knowing the editor or title of any edition would not find them in the catalog, they resorted to the use of subject entries under the heading "Dead Sea Scrolls"--thus misrepresenting the editions of the scrolls as works about them and confusing the structure of the catalog. Collections or composite works which, like the Dead Sea Scrolls, are edited but not compiled or composed by the editor should be treated like other works of multiple authorship that have no principal author or compiler--as discussed in the next section.

b. Works of Multiple Authorship that have no principal author or compiler. Examples of this category are works of joint authorship, exchanges between several persons (as correspondence, conversations, debates) and collections which have no compilers or no known compilers (as the Dead Sea Scrolls or the Greek Anthology). In the absence of anyone represented as the principal author or compiler, a work of this category would appear to require always entry under its title. Tradition and usage, however, have favored the continued entry of a work of two or three authors, or of an exchange between two or three persons, under the one named first on the title page, with added entries under the others. This exception is both illogical and impractical. Logically, there is no apparent reason why this exception should be made for works of two or three authors, other than the weight of tradition. Practically, this exception entails problems when the order of the names differs on the title pages of the different editions, or when the authors are not named on the title page. To deal with these problems, special rules had to be provided. One prescribes that if, in a later edition, the order of the authors' names differs from that in the earlier edition, the entry should be under the author named first in the first edition--which complicates unnecessarily the process of cataloging, particularly if the library does not have the earlier edition. And another special rule prescribes that, if the authors are not named in the publication, the entry should be under the title--which will complicate matters if the library should later get another edition in which the authors will be named, and which is also inconsistent with the first and basic rule directing entry under author whether or not the author is named in the work. This exception is particularly inept in the case of a work of two or three corporate bodies--as the Catalog Rules of 1908--issued simultaneously by these bodies, with each body named first in its own edition. And it is interesting to note that, despite the rule for works of two or three joint authors, the Catalog Rules of 1908 were entered in the Library of Congress catalog under title--presumably simply to avoid an incongruity.

A special type of composite works are those including different kinds of contributions--as a text by one with illustrations by another, a narrative by one with photographs by another, the music of a composer with words by an author, the reproductions of an artist's works with an essay about him, the letters of a person with a biographical sketch about him. In all such cases, who is to be regarded as the principal author? There is no one criterion applicable in all cases, but rather a series of criteria to determine what aspect of the work might be regarded of primary importance or interest. In some cases this is implicit in the character of the work. Given an illustrated work, or a musical score with an accompanying text, there will usually be little doubt that the illustrations in the first case and the accompanying text in the second are of subordinate importance. In other cases, the relative volume of the different contributions will indicate the primary purpose and interest of the work. Given a work consisting predominantly of reproductions of the works of an artist with an essay about him, the reproductions should be regarded as the principal aspect of the work. Where neither the character of the work nor the relative volume of the contributions can be regarded as determinant, the wording of the title might indicate the intent of the work. Failing these, the one named first on the title page should be treated as the principal author, if not more than three contributors are involved; otherwise, the entry should be under title.

c. Works of changing authorship. Examples of this category are directories, encyclopedias, and similar reference works which need, and are intended, to be kept up-to-date by successive editions, and are therefore subject to changing authors or editors. Although any given edition may clearly appear as principally the work of a certain editor, entry under the editor would separate the editions of this continuing work in the catalog, and the entry should therefore be under the title of the work.

This condition has apparently vaguely been sensed in the former rules, and is reflected in several special rules for certain types of publications--e.g., "Enter almanacs . . . and similar serial publications under title," "Enter a directory published serially under the first word of the title . . ." "Enter a telephone directory . . . under title if published serially,"[20] the qualification "serially" meaning "intended to be continued in successive editions" and therefore subject to changing editorship--but the underlying condition has not been recognized and treated as such, and it continued as a festering problem. It was exposed in the course of the revision of the previous rules, and it was proposed that a work subject to change of authorship or editorship should be entered under title;[21] but the proposal was objected to as precarious and was set aside. The result is that, in the new rules, the original edition of the Directory of American Scholars is shown as entered under the editor, while the fourth edition is under its title[22]--a separation of editions contrary to the objectives of the catalog and the tenor of the new code as a whole. Obviously, no rule can require a cataloger to be clairvoyant or to be able to predict in all cases whether a work will become one of changing authorship; but neither can he ignore realities. Given a work like the Directory of American Scholars, which is bound to become out-of-date in a few years and require periodically new editions, and one which could readily be continued by other editors, it should be considered sufficient to regard it, for these reasons, as a work potentially of changing editorship, and therefore one to be entered under title--without undue qualms about the possibility that it might never have another edition or editor. It is even more sinful bibliographically, however, to ignore a change of editorship in the successive editions of a work after it has occurred and to treat the editions as distinct works--as is done in the new rules.

d. Serials. The most typical illustration of works of changing authorship or editorship is the "serial," defined as "a publication issued in successive parts . . . and intended to be continued indefinitely," and including "periodicals, newspapers, annuals . . . the journals, memoirs, proceedings, transactions, etc., of societies, and numbered monographic series." Both the former and the new rules prescribe that a serial should be entered generally under its title, but both have exceptions in the case of serials issued by a corporate body. In the former rules, the exception was a serial whose title was not "distinctive," as Bulletin of, Journal of, Proceedings of, etc., followed by the name of the corporate body, in which case the entry was to be under the corporate body.[23] Since the qualification "distinctive" is a relative one, vexing questions arose when the title could not readily be classified as either "distinctive" or "indistinctive." There was also a feeling that serially published reports of a corporate body should be entered under the corporate body as author whether or not the title was distinctive. To remedy the situation, the new rules restrict the entry under title, in the case of serials issued by a corporate body, to those representing "a periodical, monographic series, or serially published bibliography, index, directory, biographical dictionary, almanac, or yearbook," and from these are further excepted those serials whose "title (exclusive of the subtitle) includes the name or the abbreviation of the name of the corporate body, or consists solely of a generic term that requires the name of the body for adequate identification of the serial," which are to be entered under the corporate body.[24] This new prescription may be more helpful to the cataloger in determining which serials of a corporate body should be entered under title and which under the issuing body, but there is no apparent reason to explain why a "serially published bibliography, index, directory, biographical dictionary, almanac, or yearbook" should require entry under title but no other serially published works. It may be recalled that the Introduction to the new code notes that "Earlier codes emphasized specific rules for various types of publications" and that such rules "tended to obscure underlying principles and basic system,"[25] but the rule for serials issued by a corporate body is based on nothing but "types of publications." If one scrutinizes the examples for some underlying criterion, one is further puzzled to find the Statistical Abstract of the United States entered under title, but the Carload Waybill Statistics under the issuing corporate body. There is a note under the former saying that it is a "Yearbook issued successively by various agencies of the U.S. Government," but it is not clear whether the reason for its entry under title is the fact that it is a "yearbook" or the fact that it is "issued successively by various agencies." There is no note under the Carload Waybill Statistics, but the Library of Congress catalog shows that it is also a yearbook. A footnote to the rule explains that "The term 'yearbook' is to be understood to exclude a work the content of which is necessarily the expression of the corporate thought or activity of the body . . .," but this note would appear to apply equally to both examples. One must conclude that the reason why the Statistical Abstract of the United States is entered under its title is the fact that it is "issued successively by various agencies." This is a good reason, but this reason invokes the criterion of "works of changing authorship" not recognized in the new rules and potentially applicable also to Carload Waybill Statistics.

If one were to inquire about the reason why serials are so generally entered under title, he would very likely be told that it is because they are "best known" by their titles. This might be a valid reason if the question of main entry involved no other considerations. It was the determinant reason in the early catalogs, and may still be found in primitively fashioned catalogs, whose objective, as already noted, is merely to aid in the location of a particular publication. Adoption of the second objective of the modern catalog to relate together the works of an author and the editions of a work, and with it the use of multiple entries to serve multiple purposes, has made this reason obsolete. The fact that a work may be "best known" by its title is a reason for an entry to be made under the title, but not necessarily for the main entry. If the second objective is also to be served, the main entry, as already explained before, will need to be under its author. That is why the first rule emphasizes "Enter a work . . . under the person or corporate body that is the author, whether named in the work or not."[26] Certainly a work whose author is not named in it will generally be "best known" by its title, but this is no longer a reason for the main entry to be made under the title. The purpose can equally well be served by a title added entry.

There is one reason, and only one reason, why a serial, unlike a monograph, could not generally be entered under its corporate author or personal editor--and that is that, because it is "intended to be continued indefinitely," it is subject to change of authorship or editorship. The Library Journal, which began as "official organ of the Library Associations of

America and of the United Kingdom," later became the "official organ of the American Library Association," and ultimately a private professional organ. The vicissitudes of The Library, which began as "official organ of the Library Association of the United Kingdom," were similar. Special Libraries, which until January 1969 carried the banner "Official Organ, Special Libraries Association," no longer does it, and the editorial in the January 1969 issue suggests that this is not the result of an accident or oversight. But if one recognizes that the reason for the entry of serials under title is that they are subject to change of authorship, one will also be led to recognize the conditions when this reason does not obtain. Looking at the present organs of the American and the British Library Associations, the A.L.A. Bulletin and the Library Association Record, one will readily note that these cannot succumb to the fate of their predecessors, simply because the inclusion of the initials of one and of the name of the other of the issuing bodies in the titles of these serials makes them inseparable from these bodies. Again, looking at some annual reports of libraries, or other "house organs," issued under catchy titles, it will also be realized that a serial limited, largely or exclusively, to the business or proceedings of a particular body is also not susceptible to a change of the issuing body, regardless of the character of the title. Both these conditions--a title including the initials or the full name of the issuing body, or a contents limited largely to the activities, business, or proceedings of the issuing body--are rational and practical reasons for entry of such serials under their issuing bodies as authors or compilers.

Because of its indefinite continuity, a serial is also subject to change of title in a manner significantly more consequential than that occasionally encountered in monographic works. When such a change occurs, three courses of action present themselves: (1) to leave the serial under the original title, with appropriate notes added on the original entry to explain the changes that have taken place, and references or added entries made under the new title; (2) to recatalog the serial under its latest title, with notes to explain the changes that have taken place, and references or added entries made under the earlier title; (3) to treat each title as representing a different serial (excepting minor variations in wording and changes of short duration) with explanatory notes to relate them. While each of these courses may be justified on logical and practical grounds, and may be preferable in certain circumstances, the third course is in general to be recommended for the following reasons: (a) a serial is, in its course of existence, susceptible to a change of scope and character which makes it in fact a different serial, and the new title may well signify that such a change has taken place, despite the continued numbering of the volumes; (b) a serial does not have the organic unity of a monographic work, it is rather a source of various works, and both the one who cites and the one who looks for a serial is almost always concerned with the part identified by a particular title, not the history of the whole serial; (c) this course is technically more suitable to the changing course of a serial.

e. Works of unknown or uncertain authorship. The principle of authorship and the purposes of the catalog require that a work of known authorship should always be entered under the author--whether or not he is named in it. If such a work is published anonymously, a title added entry will obviously be required to facilitate its location in the catalog; and if it is attributed to another person, an explanatory note and an added entry under that person will be required. The main entry, however, is not affected by these conditions. A work of unknown authorship can usefully be entered only under the title by which it is best known or by which it can best be identified (as discussed below). A work of unknown authorship inaccurately, doubtfully, or uncertainly attributed to an author has been treated formerly in three different ways. Some works generally but falsely attributed to a certain author were entered under that author, followed by the qualification "Spurious works." Other works uncertainly attributed to an author were entered under that author, followed by the qualification "supposed author." Still other works doubtfully attributed to an author were entered under title, with an explanatory note and an added entry under that author.[27] The practical value of these fine distinctions did not appear to compensate for the complexity they contributed to the process of cataloging and to the structure of the catalog. They were therefore abandoned in the course of the recent revision, and have been replaced by one simple rule providing that all such works should be entered uniformly under title, with explanatory notes, and added entries under the purported authors.[28] This is not only a more practical rule, but one that will also serve to distinguish more meaningfully and consistently between the works of an author and those inaccurately, doubtfully, or uncertainly attributed to him.

A practical exception is to be made, however, in the case of works of ancient origin traditionally and universally attributed to a certain character--as the Fables of Aesop--which are generally entered under their purported author without qualification, even if the very existence of that character is in doubt.

f. Revisions and adaptations. Revisions and adaptations represent modifications of an author's original works. Revisions are normally intended to bring a certain work up-to-date; adaptations are made for particular purposes--as adaptations for children, for use as a motion picture script, a dramatization, and so on. Both may differ from the original work in various ways and varying degrees, and present the problem of whether or when they should be entered under the original author with an added entry under the reviser or adapter, or vice versa. Under the former rules the cataloger was required to determine whether or not a given revision was "substantially a new work," whether the adaptation bore more than a "slight kinship with the original work,"[29] and decide the entry on this basis. It should be apparent that, whatever their ideological value, practically these criteria could only be frustrating, if taken seriously, and conducive to much inconsistency. Nor are they unavoidable. A revision might best be treated in accordance with the way it is represented. As long as it is represented as a revised edition of the work of the original author, it should be treated as an edition and entered under the original author. If it is represented as a work "by" the reviser based on, or forming an edition of, the work of the original author, it should be so treated and entered under the reviser, with an added entry under the original author to relate it to the original work. In the case of adaptations, however, there are tangible literary criteria. A work that is rewritten (as for children) or reconstructed (as for performance on the stage) should be entered under the adapter, with an added entry under the original author to relate it to the original work. The idea of "le style est l'homme" is a more tangible and meaningful criterion for determining primary authorship than the vague notion implicit in the definition that the author is the one responsible for "the intellectual content of the work"--a notion undoubtedly responsible for much of the vagueness and confusion in the former rules.

In applying the criteria suggested, however, one should be aware of the fact that the term "adaptation" may be used in a sense different from that used here. For example, a German work "adapted" for use as a textbook is most likely to be an abridged and annotated edition of the work, not one rewritten or reconstructed, and should be treated as an edition of the original work.

2. Identification of Author. When the entry of a work has been determined, the names under which the main or added entries are to be made may present the following questions:

a. Choice of name and of form of name. If an author appears in his works, or is otherwise known, under more than one name or one form of the name--as under his real name and an assumed name, family name and title of nobility, secular name and name in religion, full name and brief name--the purposes of the catalog require that he should be identified in it by one name and one form of the name only, with references to it from the other names and the other forms of the name under which he might be sought. But the choice of the name and of the form of the name has been a subject of great controversy, with strong arguments in support of each alternative. Those who favored the real name and the full name invoked the argument of realism and stability in cataloging, while those who favored the name and form of the name used by the author in his works invoked the convenience of the catalog user who is likely to know the author best by this name. In the matter of family name versus title of nobility, the British favored the choice of the family name over the title of nobility in order to prevent separation of members of the same family in the catalog, and taunted the Americans for abolishing nobility in practice but preserving it in the catalog; but the Americans considered the British arguments as irrelevant to the purposes of cataloging, and disagreed with the British on this point. Seeking to embody the best of all arguments, the former rules adopted as a general principle the "full" and "most authentic" name, but not without some consideration for the "author's usage" and the name by which he was "best known" "when the most authentic [name] has been but little used and another form has been in use predominantly both by the person concerned and in records and literature."[30] Given such difficult qualifications, the results often reflected the temper of the cataloger rather than any principle. The conservative cataloger, to be quite safe, entered Mozart under his full name as Mozart, Johann Chrysostom Wolfgang Amadeus; While the more liberal, relying more on the author's own usage, entered Casals under the form of name used by him, as Casals, Pablo, not under his full name "Salvador Casals, Pablo Carlos." Two Library of Congress catalogers, using the same rules, had different answers for similar questions. One entered Will Durant under his full name Durant, William James, not "Durant, Will" as found in his works; while the other noted that John Dos Passos' full name was John Roderigo Dos Passos, but entered him under Dos Passos, John because the author himself used this brief form of the name. If the question of choice of name were to be considered in light of the objectives of the catalog, and in this light only, it would seem apparent that these objectives would best be served if an author were entered in the catalog under the name by which he is commonly identified in his works--whether that is his real name, assumed name, nickname, or title of nobility. The argument in support of this principle has most persuasively been stated by Augustus De Morgan. Explaining his reason for using the Latin names of those who wrote in Latin rather than their vernacular names, he said: "It is well to know that Copernicus, Dasypodius, Xylander, Regiomontanus, and Clavius were Gepernik, Rauchfuss, Holtzmann, Nüller and Schlüssel. But as the butchers' bills of these eminent men are all lost, and their writings only remain, it is best to designate them by the name they bear on the latter, rather than the former."[31] Of course, an author may not be consistent in his use of the full or brief name, and may also use simultaneously different names in different works. In this case, the use of the full name and of the real name is a logical choice--but not as a general principle.

Another question of choice of name arises when an author has changed his or her name--as in consequence of marriage, or change of citizenship. In earlier times, the continued use of the earlier name, with a reference from the later name, was favored for economical and technological reasons--to avoid changing the earlier entries in the catalog. In modern cataloging, the last name has been favored, with a reference from the earlier name, as a means of keeping the catalog up-to-date.

b. Qualification of name. The objective of the catalog to show what works the library has of a particular author requires that the author should be adequately identified and distinguished from others of the same name, so that their works will not be confused. This raises the question of the means by which authors of the same name can best be distinguished. The means used in earlier catalogs reflected the customs of the times. In the British Museum catalog, for example, such authors are distinguished by their titles, occupations, or places of residence. All of these, however, are much more subject to change in modern times than they used to be, and are therefore not dependable as identifying designations. The means used in modern Anglo-American cataloging as a primary qualification are the dates of birth and death of a person. Where these are available, they serve best to distinguish persons of the same name, although the catalog user in search of one of these authors may not readily recognize the author he wants. Where these dates are not available, the designations used by the author himself in his works are a secondary means. In the absence of dates--which include approximate dates--and designations used in the author's own works, it is best to leave such authors temporarily unidentified. There are two other methods that have been used in such cases and should be abandoned. One is a designation manufactured by the cataloger himself on the basis of the subject of the work. Commenting on this method, one cataloger related at a meeting about a book on the art of cooking he once received which he found was written by one who had previously published a collection of poetry and had been designated in the catalog as poet. The other method to be avoided is prescribed in one of the new rules: "If further differentiation is required, add . . . other forenames not customarily used by the author.[32] This means that if the full name of a certain John Smith, who could not otherwise be distinguished from other unidentified John Smiths, were found to be, say, Xenophon John Smith, he should then be entered in the catalog under his full name Smith, Xenophon John, not under Smith, John as he is named in his work or works. Now, it is difficult to see how this method will serve the objectives of the catalog. It certainly will not help, but hinder, the reader who may have to look for a certain work of that John Smith under his name--as when he is uncertain about the exact title of that work. It might help the cataloger to bring together the works of this John Smith; but even if he did, how is the catalog user, unaware of the cataloger's discovery, to find these works under Smith, Xenophon John? Obviously a reference from Smith, John to Smith, Xenophon John would be meaningless. To avail himself of John Smith's full name as a means to distinguish him from the other John Smiths and yet to leave him in the catalog under the name under which he is likely to be sought, the cataloger might use the unused forename as a qualification rather than as a part of the name--that is, as Smith, John (i.e., Smith, Xenophon John). This would cause this John Smith to stand in the catalog together with the other John Smiths, where he would be sought, and yet be distinguished from them by the qualification following his name.

c. Entry of name. The question of entry of the name of a person in the catalog arises from the fact that personal names are customarily listed not directly under the form used by the person, but under an inverted form--that is, the name John Smith is not listed in any directory or reference work under this form, but under the inverted form Smith, John. Because the customs relating to the treatment of personal names differ in different countries, the question of entry must be faced in dealing with names of foreign authors, particularly in the case of compound names and names including prefixes. For example, in Germany, the name Verner von Braun would be listed under the letter B, as Braun, Verner von, but in English-speaking countries it would be listed under the letter V, as Von Braun, Verner. This question has always troubled the cataloger, first, because he was not always sure how a given name was treated in the country of its bearer; second, because he was not always quite sure which was the individual's home country--that is, whether a given Von Braun was a German citizen or an American citizen; and, lastly, he was troubled by the thought that his efforts to ascertain the country and the customs of a person would not be helpful to most users of the catalog who would not know these facts and would probably be confused by the entry of one Von Braun under Von and another under Braun. Seeking a compromise which, on the one hand, would reduce the complexity of the differences, and, on the other, would not do too much violence to foreign names, the cataloger arbitrarily "split the differences," following the customs of the country in the better known cases (as in the treatment of the prefixes von and de in the names of German and French authors) and ignoring them in the less known cases (as in the treatment of the prefixes vom or zum in German, and in sacrificing the prefix de in Italian in the interest of uniformity with the names of French authors). This method may have had its merits in earlier days, when people were more parochial in their outlook and interests and were generally unfamiliar with foreign names. In modern times, this method has tended to make the catalog increasingly anachronistic, and it has become increasingly apparent that the catalog cannot arbitrarily impose a pattern on the names of people from other countries any more than it could ignore the accepted pattern of its own country. This led in the course of the revision to the principle that, in the entry of names in the catalog, the customs prevailing in the country of the bearer of the name should be followed, and this principle was adopted by the International Conference in Paris.[33] This principle, however, presents one important practical difficulty for both the cataloger and the catalog user. This difficulty arises in those cases where authors using the same language belong to countries differing in their treatment of the same kind of names--as the treatment of the prefix _de_ in the names of French and Belgian authors writing in French. Because of this difficulty, it has been deemed best in the Anglo-American rules, for bibliographical purposes, to modify the principle and provide that the name of a person should be treated in accordance with the customs prevailing in the language used by him.[34] This means, for example, that the name of a French writer would be treated as that of a Frenchman, whatever his citizenship.

3. _Identification of Work_. The work of an author is generally identified by the title under which it is published, which is normally regarded not only as a description of the contents but also as the name of the work. There is no problem of identification as long as a work is found under one particular title. But the editions of a work may be issued, sometimes simultaneously, under different titles,[35] and the translations usually have different titles. If these editions and translations are to be related and displayed in the catalog as representations of the same work, then one title must be selected to identify the _work_ and to relate its editions and translation, just as one particular name must be selected to identify an author and to relate his works together. The problem involved was recognized by Panizzi who provided a special rule for the entry of all editions and translation of the Old and New Testament under the word "Bible" in

order to prevent their separation under their individual titles,[36] and another rule for "Translations to be entered immediately after the original, generally with only the indication of the language into which the version has been made."[37] It is noteworthy that although Panizzi's rule for the Bible has been expanded in the course of time in the Anglo-American rules to provide a similar treatment for all "Anonymous Classics," the underlying problem has not been recognized as one of a general character to which all works are subject, whether or not anonymous and whether or not classics, and no solution was provided to deal with it generally wherever found. Editions and translations of "anonymous classics" were entered, like the Bible, under particular titles by which the works were best known, and by means of which their editions and translations were related in the catalog; editions and translations of other anonymous works were entered directly under their individual titles, but were indirectly related by means of added entries under the original titles; editions and translations of the works of authors were entered, after their authors' names, under their individual titles, and were not related in any way, except for notes on the translations and the editions issued under other titles about the original title of the work. One consequence of the last method is interestingly illustrated by the experience of a bibliographer at the large card catalog of the Library of Congress. Compiling a list of the editions of the works of Ralph Waldo Emerson, she found under the title The American Scholar editions published in 1893 and later, but no earlier editions which she was sure the Library of Congress would have. It was not until she worked her way through the many entries under Emerson's name and reached the letter O that she unexpectedly came upon two editions entitled An Oration Delivered Before the Phi Beta Kappa Society, at Cambridge, August 31, 1837, published respectively in 1837 and 1838, the first of which luckily carried the note "Usually entitled 'The American Scholar.'"[38] There, then, were the first two editions of The American Scholar which almost escaped her. What she could not understand and complained about, however, was why, if the cataloger did know that these were editions of The American Scholar, did he allow them to be separated from the other editions and hidden where few would find them? Surely, she felt, this was less than helpful to the catalog user.

Under the new Anglo-American rules, this would not happen, because the early editions would be related to the other editions by using the title American Scholar as a "uniform title," thus:

Emerson, Ralph Waldo
[American Scholar]
An Oration Delivered Before the Phi Beta Kappa Society,
at Cambridge, August 31, 1837 . . .

with a reference from

Emerson, Ralph Waldo
An Oration Delivered Before the Phi Beta Kappa Society,
at Cambridge, August 31, 1837
see his
American Scholar.

The selection of the "uniform title" to identify the work is similar to the selection of the name of the author. Early works, and others of which there are no original editions or which have no original titles, are best identified by the designations by which they are most commonly identified in their published editions, in literary history, or other relevant sources--as Beowulf, Codex Brucianus, Dead Sea Scrolls. Other works are generally best identified by their original titles, except, as in the case of the American Scholar, the original title was early abandoned and the subsequent editions have been issued consistently under another title, in which case this title is to be preferred.

The entry of translations under the original title, which might be in a language quite unfamiliar to most users of the catalog, has been criticized as calculated to make their location more difficult. This entry is nevertheless requisite in a library whose holdings are intended to include the original editions as well as the translations, for the following reasons: (a) the original is the real title by which the author himself has named his work; (b) there is only one original title, but there may be a variety of translated titles, in the same language or different languages, and the selection of one particular translated title to identify the work would be both difficult and subject to change as new and more popular translations are received; (c) since translations are generally received after the original editions have been cataloged, the use of a translated title to identify the work and relate all its editions and translations would require recataloging of all original editions when the translations are received; (d) since most works will have no translations, the entry of those that will have translations under their translated titles will mean that works in foreign languages will appear in the catalog sometime under the original title and sometime under a translated title--a condition not conducive to an understanding of the structure of the catalog by its user. However, in a library whose holdings are not intended to include the original editions, the entry of translations under a translated title--but one particular title only for a given work--would be more useful. Thus Chekhov's Cherry Orchard could be entered

> Chekhov, Anton.
> The Cherry Orchard, a play in
> four acts . . . translated from the
> Russian by . . .

without the uniform title Vishnevyi Sad, which is the original title. In this case, however, the translation entitled The Cherry Garden should also be entered under the title selected, not under its own title, thus:

> Chekhov, Anton.
> [Cherry Orchard]
> The Cherry Garden; a comedy in
> four acts . . . translated from the Original Russian
> by . . .

with a reference from

Chekhov, Anton
  The Cherry Garden
    see his
  Cherry Orchard

and the subject and added entries of related works should include the translated title selected instead of the original title used on standard catalog cards:

Logan, Joshua
  The Wisteria Trees, an American
play based on Anton Chekhov's The
Cherry Orchard . . .

  I. Chekhov, Anton. Cherry Orchard.

The consistent use of a "uniform title" to identify a work and relate its editions and translations is one of the significant features of the new rules.

4. Description of Material. After the main and added entries have been determined; the author and others under whom the work is to be entered, and the work itself, have been properly identified; and the necessary references from other names and titles have been indicated, then the time has come for the last step in the process of descriptive cataloging--description of the material embodying the work. Since the materials of a library are normally provided with tags designed to identify them and describe their contents, these tags have naturally been used as a basis of description of the materials. Hence the rules of description for books, prior to their revision published in 1949, were based primarily on a principle of "transcription" of the title page intended to mirror this tag, "the face of the book," in the entry. The purpose of this principle seemed understandable, but its implementation involved problems stemming from the fact that the title pages of books, including those of editions of the same work, are

often heterogeneous in design, while the entries must be uniformly designed to form an integrated catalog. To reconcile the principle of transcription with the requirements of the entry, two basic measures were adopted. First, anything appearing on the title page before the title proper of the book was to be omitted in the transcription of the title page, the omission marked by three dots, and the omitted element given in an "at head of title" note. The mark of omission together with the note were then to convey an idea of the appearance of the elements on the title page. Second, the elements of the imprint were to be given in a fixed order--place, publisher, date--regardless of their order on the title page. As a result of these rules, the edition statement, which is often of critical importance in the selection of a particular edition, would sometimes appear in the entry after the title, where it logically belongs and is normally found on the title page, but sometimes be hidden in a note if the designer of the title page chose to place it either at the head or on the verso of the title page. The principle of "transcription" also left open the question of what should or should not be included in the entry. It was apparent that not everything printed on the title page was always relevant to the purposes of the catalog, and that not everything required for these pruposes was always found on the title page. There was a number of rules for omissions and additions, but no general principle that would underlie the rules and that might be used as a criterion in the absence of any specific rule. Finally, the principle of "transcription" became increasingly difficult to apply in cataloging books with fancifully designed title pages. There was only one argument in support of this principle--an untested assumption that it was essential to a positive identification of the edition which otherwise might be confused with another edition of the work. A test of this assumption failed to sustain it and cleared the way for a revision of the rules of description.[39]

The essence of the revision of these rules consisted, first, of a clarification that the purposes of description were (1) to identify the book so as to distinguish it from other books representing different works or different editions of the same work, and (2) to characterize its contents so as to help the catalog user select the source that might serve him best. This meant that the entry was to include those items which were necessary or desirable either for the identification or for the characterization of the source, and only these items, regardless of the contents of the title page. Second, the revision prescribed a fixed order for the organization of the contents of the entry which would respond to the interests of the catalog user and improve the integration of the catalog. The items selected from the title page were to be "transcribed" accurately, but not necessarily in the order in which they appeared on the title page, and without indication of that order. Items supplied from other sources in the description of the material--for example, the edition statement from the verso of the title page--were, however, to be enclosed in brackets to indicate that they were not on the title page, in order not to impair identification of the material. Thus the former principle of "transcription" has not been entirely eliminated, but restricted to the extent necessary for the purposes of identification. The title page as such is no longer transcribed, but the principal items of the title page used in the entry are. The contents and organization of the entry are determined, not by the title page, but by its own purposes and requirements.

5. Publications of Corporate Bodies. Publications of corporate bodies introduce special problems which complicate particularly the process of cataloging and must be considered separately. These problems, which have been among the most frustrating in cataloging and the subject of much discussion, stem from the fact that (a) the very essence of a corporate body--

that is, what constitutes a corporate body in cataloging--is not quite as self-evident as may be assumed; (b) since the acts and communications of corporate bodies are not always represented explicitly as such, and since, furthermore, corporate bodies often act and speak through individuals who may represent them but who may also speak in their own names, there is a special problem of determining when a publication of a corporate body should be regarded as an expression of that body, and when not; (c) since the identity and name of a corporate body are different in character from those of an individual, the question of choice of name by which a corporate body should be identified and of entry of that name in the catalog has been the subject of considerable controversy; and (d) since, unlike individuals, corporate bodies have subdivisions--as departments, sections, bureaus, offices, etc.--the treatment of such subdivisions presents a special problem.

a. Corporate body. Despite the attention and thought devoted to the treatment of publications of corporate bodies in Anglo-American cataloging, no definition was provided in the rules prior to 1967 of what constituted a "corporate body" in cataloging. Jewett in his original rule on corporate authorship spoke of "bodies of men, under whatever name, and for whatever purpose," which suggests that he would have defined a corporate body as a group of persons, identified by whatever name, and organized for whatever purpose--an unexceptional definition. This concept was reinforced by a long list of examples including "Academies, institutes, associations, universities, colleges; literary, scientific, economical eleemosynary, or religious societies. . ." etc.[40] Cutter's general principle "Bodies of men are to be considered as authors of works published in their name . . ."[41] might also have been construed as implying that a corporate body was a group of individuals identified by a certain name; but his inclusion among the works of corporate authorship of "anonymous publications of any class (not organized) of citizens," such as an "Application to Parliament by the merchants of London" which was to be entered under "London. Merchants"[42] meant that any group of individuals, whether or not it had a name, was to be regarded as constituting a corporate body and might be treated as a corporate author. The situation became vaguer in the 1908 rules, where Cutter's general principle was relegated to a definition: "Corporate entry. Entry under the names of bodies or organizations for works published in their name . . .,"[43] and the rule for publications of classes of citizens was retained verbatim.[44] In the 1949 rules, however, the situation became considerably more confused. On the one hand, the rule for "Classes of citizens" assumed larger proportions and an esoteric character that would baffle not only the user but even the maker of the catalog--for example, the entry of a "Celebration of the ninetieth anniversary of American independance [!] in Geneva (Suisse) July 4th, 1866 . . ." under "Geneva. American residents."[45] On the other hand, "official accounts and publications of results of scientific and exploring expeditions" and "the official log of a ship,"[46] which by their very characterization as "official" records would have been expected to be treated as works of corporate bodies, were not included in the chapter dealing with "Corporate Bodies" but elsewhere among the rules for Manuscripts, Maps, Music, and Works of Art, forming together a group of "Works of Special Type." The failure to recognize the official reports of an expedition and of a ship company as works of corporate bodies suggests the possibility that the names of expeditions and ships were not readily recognized as designating also particular groups of persons identified by them and thus constituting corporate bodies. It was then apparent that an adequate definition of what was a "corporate body" was prerequisite to any discussion of the problem of corporate authorship, and for cataloging purposes, the following definition was adopted in the new rules: "Corporate body. An organization or group of persons that is identified by a name and that acts or may act as an entity."[47] This is probably what Jewett meant to imply when he originally referred to "bodies of men, under whatever name, and for whatever purpose," but Cutter's introduction of "anonymous publications" of unnamed classes of citizens as works of corporate authorship introduced the confusion that followed. The definition adopted excludes the anonymous publications of classes of citizens, which are to be treated under the new rules as other anonymous publications--that is, entered under title. On the other hand, the official reports of any group of persons representing any named institution or undertaking--including expeditions and ships -- are prima-facie examples of works of corporate authorship requiring no special rules. The meaning of the definition would be made clearer, however, if the qualification "particular" were included in it to read: "Corporate body. A particular organization or group of persons that is identified by a particular name . . ." This would help to distinguish better between a general description of a class of citizens ("the merchants of London") and the name of a particular group ("The Merchants Association of London").

b. Corporate author. It was easy to recognize the principle of corporate authorship--it seemed logical and consistent to say that a corporate body, like an individual, should be treated as the author of its acts and works; but it has been much more difficult to implement it, because corporate bodies and their actions are so much more complex in their nature than are individuals and their works. Jewett's original rule--"Academies, institutes, associations, universities, colleges . . . . or other bodies of men, under whatever name, and for whatever purpose, issuing publications . . . are to be considered and treated as the authors of all works issued by them, and in their name alone"[48]--sounded fairly uncomplicated.

But when one turned to the "Examples" for illustrations of the meaning of the rule, that meaning became clouded. One could see the "Philosophical Transactions of the Royal Society of London" and the "School Laws of Rhode Island" as examples of publications of corporate bodies "issued by them, and in their name alone," because the Royal Society of London, and the state of Rhode Island, are specifically named in the titles as the authors of the works. But the British Museum publication "A short guide to that portion of the library of printed books now open to the public" and the "Catalogue of Columbia College, in the City of New York" do not specifically name the British Museum and Columbia College as the authors of these works, and yet are treated as "issued . . . in their name." What, then, was the phrase "issued . . . in their name" intended to mean? One might infer from the fact that these publications were issued by these bodies, that they report on the activities of these bodies, and that they name no individuals as authors or compilers, that they were most probably intended as communications of these bodies and should be treated as such. But this is an inference scarcely implicit in the phrase "issued . . . in their name."

Cutter's "General principle" which appeared a quarter of a century later, although much briefer than Jewett's rule, was much more comprehensive. It stated "Bodies of men are to be considered as authors of works published in their name or by their authority." The addition of "or by their authority" recognized an important fact, that communications of corporate bodies are not always specified as such and yet may bear the authority of the bodies issuing them, as illustrated by the Guide of the British Museum and the Catalogue of Columbia College mentioned before; and these should therefore be treated as works of their issuing bodies. But the problem which Cutter's principle raised was one of necessary limitation: are not all publications of corporate bodies (other, of course, than commercial publishers) issued "by their authority"? Cutter's principle was, in essence, sound and a distinct improvement on Jewett's rule, but its application was to remain a difficult problem. In the subsequent three editions, Cutter's specific rules relating to the treatment of publications of corporate bodies underwent a continuous expansion and change, but his basic principle of corporate authorship remained unchanged.

If Cutter's general principle of corporate authorship was in need of further specification, it did, like a compass, point out the cardinal directions to guide one in the development of the specifications needed. The Catalog Rules of 1908, which succeeded Cutter's rules, jettisoned this compass, and henceforth the concept of corporate authorship became vaguer and vaguer. The substance of Cutter's principle, without its imperative mode, was used--as mentioned before--as a definition of the term "Corporate entry," where it read "Entry under the names of bodies or organizations for works published in their name or by their authority."[49] But there was no one general rule to state which publications should be treated as works of corporate authorship. The 1949 rules, published three quarters of a century after Cutter's principle was first published, provided a "General rule" in place of Cutter's "General principle." The rule was obviously much more labored and elaborate than Cutter's concise principle, but also much more obscure. It stated: "Governments and their agencies, societies, institutions, firms, conferences, etc., are to be regarded as the authors of publications for which they, as corporate bodies, are responsible"[50]--which is nothing but a tautology. As if recognizing the weakness of the statement, the rule went on to illustrate it by adding: "Such material as official publications of governments; proceedings and reports of societies; official catalogs of libraries and museums; reports of institutions, firms, conferences, and other bodies is entered under the heading for the corporate body, even though the name of the individual preparing it is given." But a list of examples, however long, is not an adequate substitution for a needed criterion, and is not of much help when the rule itself illustrated by it is basically weak.

Attempting a more helpful explanation of what is to be regarded as a "Work of Corporate Body," the unfinished draft of 1960 proposed the following:

> "A work which, explicitly or implicitly, represents an act, communication, or product of the activity of a corporate body is entered under the name of that body . . . This includes (a) the proceedings, translations, debates, reports and other works produced by or issued in the name of a corporate body; (b) administrative, regulatory, and other official documents--such as constitutions, rules, decisions, periodic reports of activities, announcements, guides, catalogs--which, even if produced by an individual, implicitly bear the authority of the issuing body; and (c) works issued by a corporate body, other than a commercial publisher, without the name of an author or compiler and not represented as anonymous works."[51]

This rule, which may be regarded as a more specific and detailed restatement of Cutter's principle, is aimed at two purposes. First, to point out that corporate authorship may be either explicit or implicit; and second, to illustrate explicit authorship as including works produced collectively by corporate bodies or issued in their names, and implicit authorship as including works which by their contents, character, or manner of presentation are clearly expressions of their issuing bodies. In the new rules, the rule relating to "Works of corporate authorship," based on the wording adopted at the International Conference in Paris, reads:

> "Enter under a corporate body . . . a work that is by its nature necessarily the expression of the corporate thought or activity of the body. Such works include official records and reports, and statements, studies, and other communications dealing with the policies, operations, or management of the body made by officers or other employees of the body . . ."[52]

This rule seems, however, not as an improvement on that of the unfinished draft, but rather as a retreat from the more specific to the more general, and from the more concrete to the more abstract. The intent of this rule is further obscured by a subsequent rule which reads:

> "Enter under the corporate body a work, other than a formal history, describing the body, its functions, procedures, facilities, resources, etc. or an inventory, catalog, directory of personnel, list of members, etc."[53]

This rule, as it stands, is rather puzzling. Certainly "a work . . . describing the body, its functions . . . etc." could not justifiably be regarded as an expression of the body unless certain other conditions also obtained--as when the work was prepared by an officer or employee of the body and was issued by that body--but the rule states no conditions. Again, where these conditions do obtain, this rule is unnecessary, for that situation is already covered by the previous rule: "Such works include official records . . . and other communications dealing with the policies, operations, or management of the body made by officers or other employees of the body." These two rules seem to leave the critical question of which publications should be treated as works of corporate authorship more vaguely answered than it is by the rule of the unfinished draft of 1960.

c. Corporate name and entry. The cataloging of works of corporate bodies naturally involves also the questions of choice of name by which a corporate body should be identified in the catalog, method of distinguishing a corporate body from other bodies having similar names, and form of entry of the name in the catalog. The question of choice of name of a corporate body is similar to that of an individual, and the principle adopted in one case should be followed also in the other. Under the former rules, as already mentioned, the official and full name was required in both cases; under the new rules, the name by which an individual or corporate body is commonly identified in his or its works is the name by which he or it should be identified in the catalog. There is a difference, however, in the case of a change of name. Whereas an individual who changed his name remains the same and all his works are to be entered under his last name, as discussed before, a corporate body may be viewed as actually undergoing a constant change of identity, and the works of a corporate body whose name has changed may best be entered separately under the names under which they were issued, with notes made to link the different names. Although this view may be contested, it will be found theoretically tenable and practically more useful than the alternative view. To regard, for example, the Pennsylvania State University, and its predecessor the Pennsylvania State College, and its predecessor the Agricultural College of Pennsylvania, and its predecessor the Farmers' High School, as being all the same institution, and to enter the works of the Farmers' High School and of the Agricultural College etc. as being all the works of the Pennsylvania State University, is not only to assume an endless amount of recataloging (and partly of reclassification), but also to produce an impractical catalog. It would probably also surprise the Pennsylvania State University to find itself in the catalog charged with responsibility for the works of its predecessors!

The method of distinguishing corporate bodies with similar names has never been considered as a problem. It seemed natural to distinguish corporate bodies of a local character by place of location, those of a state or national character by the state or country, and others by similarly appropriate designations.

The entry of the name of a corporate body in the catalog, however, offers an instructive lesson. When Jewett first presented his rule for the treatment of publications of "bodies of men," he was obviously conscious of the need of a criterion to determine which publications should be treated as the works of corporate authorship; but the entry of the corporate name apparently never raised any question in his mind. In the "Examples" supplied by him, the British Museum, the College of New Jersey, and the United States Military Academy are all entered directly under these names as they appear on the publications cited. But when Cutter first set forth his general principle that "Bodies of men are to be considered as authors of works published in their name by their authority," he went on to note:

> "The chief difficulty with regard to bodies of men is to determine (1) what their names are and (2) whether the name or some other word shall be the heading. In regard to (2) the catalogues hitherto published may be regarded as a series of experiments. No satisfactory usage has as yet been established . . ."[54]

Accordingly, Cutter proceeded, following the rule for "Societies," to devote special attention to the question of entry of the names of "Societies." There he considered six "plans," of which the "5th Plan" was the most complex, but also the one he favored "well aware that there are strong objections" to it "but believing that Plan 5 is on the whole the best." The aim of this plan was to have "local societies" entered in the catalog under the place of location, but "societies not local" under their names; American and English "academies" under their names, but those "of the European Continent and of South America" under place; "municipal colleges, libraries, galleries" under place, but those not municipal under their names; "public schools" under place, but "private schools" under their names; "business firms and corporations" under their names, but "municipal corporations" under place; "London guilds" under "the name of trade," but "American state historical societies" under the name of the state.[55] Since these categories did not include all kinds of corporate bodies, and since not all corporate bodies of any given category could satisfactorily be treated alike because of the difference of character of their names, the 5th Plan was bound to grow in size and complexity, and its capacity for growth became increasingly evident in each of the successive editions of Cutter's rules. By 1949 the question of entry of a corporate name assumed overshadowing proportions in the cataloging rules, where a given corporate body could be entered directly under its name, or under its place of location, or under the jurisdiction supporting it, or under the name of another corporate body--all depending on such considerations as whether it was a "government agency," "society," "institution," or "miscellaneous body"; whether it was a public or private body; whether it was located in the United States, the "British Empire," or elsewhere; whether the name of the corporate body included the name of a geographical area or of a political jurisdiction; whether the name of the corporate body began with a proper noun or proper adjective, and all this in the name of the "convenience of the public" which originally led Cutter to the adoption of the "5th Plan." It was now abundantly clear that Cutter's "5th Plan" was a quicksand from which Anglo-American cataloging had to be extricated, and this became one of the significant achievements of the revision. The principle of direct entry under the name of the corporate body, adopted in the revision and subsequently confirmed by the International Conference on Cataloging Principles, was in fact a return to Jewett's practice after nearly a century's experimentation with Cutter's "5th Plan."

It should be noted that the American edition of the new Anglo-American rules includes "Exceptions for Entry under Place."[56] A footnote to the exceptions explains that they were "required primarily" to avoid very costly adaptations in many American research libraries. Inasmuch, however, as the new rules are generally being applied to the works of new authors only, there has never been a basis for this putative reason, and no reason for the anachronistic and confusing exceptions; and the British have thus well chosen in not going along with these exceptions.

d. Entry of subordinate and related body. One of the factors which complicate materially the cataloging of works of corporate authorship is the fact that a corporate body is not always a discrete entity, but may be subordinate or related to another body. When this is the case, a complex question arises. On the one hand, it would seem that a subordinate body should be entered in the catalog under the name of the parent body, both to indicate its relation to that body and also so that its works will appear in the catalog immediately after those of the body as a whole--thus bringing together the works of a corporate body and of its individual divisions in accordance with the second objective of the catalog. On the other hand, the practical difficulties would make this an impossible task: first, because it would be very difficult and costly in most cases to determine whether a given body is actually subordinate, administratively or functionally, to another body, or merely related to it; second, because the relation of a given body to another is frequently open to change, so that one that is subordinate today may be separated and become an independent body tomorrow, and vice versa; and third, even if it remains subordinate, it may not remain subordinate to the same body, or to the same division or department within the body, because of reorganizations to which corporate bodies are subject--as may be observed in the agencies of government, the divisions and sections of the American Library Association, and the departments and divisions of the Library of Congress. In view of these circumstances, the most practical course indicated is to treat any entity, or division or unit of a body, as an independent body and enter it under its own name--whenever possible. There are two conditions which militate against it. One is when the name of the subordinate body includes a term like "division," "department," "section," "unit," "chapter," and so on, which implies that it is part of another body; the other is when the subordinate body does not have a complete and self-sufficient name by which it can be identified and requires the name of its parent body for identification--as "Membership Committee," "Personnel Office," "English Language Section," "Council." In these cases the subordinate body should be treated as such and entered under the name of the body followed by its own name--as "Organization of American States. Council." The second condition may be found not only in subordinate but also in related bodies, which must therefore similarly be treated--as "Yale University. Society of Alumni."

Because of the organizational impermanence of a corporate body and the possibilities of relocation within it, an entity which is to be treated as a subordinate body should be entered directly under that entity above it which is entered under its own name, and not under that which is immediately above it, but which is itself treated as a subordinate body--except when this would create an ambiguity, as when the larger entity includes more than one subordinate entity of the same name or similar names. Thus, for example, the Cataloging and Classification Section should be entered directly under the American Library Association, and not under the Resources and Technical Services Division of which it is a part but which is itself treated as a subordinate body; but the Membership Committee of the Resources and Technical Services Division could not be entered directly under the American Library Association because it would then be misconstrued as the Membership Committee of the American Library Association.

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38. *Cf*. U.S. Library of Congress. *A Catalog of Books Represented by Library of Congress Printed Cards*, issued to July 31, 1942. Ann Arbor, Edwards Brothers, 1942-1946. V. 44, p. 538 and 546-7.

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ORGANIZATION OF THE CATALOG

The Problem. The problem of organization of the catalog is that of devising an intelligible pattern of division, grouping, and arrangement of the entries that will suggestively guide the catalog user to the entry or group of entries needed by him. The problem stems from two factors: the steadily increasing size of the catalog and the complexity of arrangement of the different types of entries, with the former compounding the complexity of the latter.

The size of the catalog is, in itself, a complicating factor. Given a fixed number of twenty-six letters under which all entries of the catalog must be arranged, the larger the number of the entries in the catalog the more of them there will be under each letter, and consequently the more complex will be their alphabetical arrangement. But what complicates the arrangement of the entries even more than their number is their heterogeneity. Titles of works are normally arranged word by word; personal names--by surname (which may be written as two words but arranged as one word), then by forename or forenames, then by dates or designations, with the designations forming a separate subarrangement as qualifications of a certain name borne by more than one person; corporate names--by name of the body, subarranged by its departments, divisions, and other units; subject headings--by the main heading, subarranged by a series of different types of subdivisions, as Education--Bibliography, Education--History, Education--Periodicals, etc.; Education--France, Education--Germany, Education--U.S., etc.; Education, Elementary, Education, Higher, Education, Secondary, etc.; Education of Adults, Education of Children, Education of Women, etc. When all these entries are interfiled and their different patterns of arrangement are interwoven, the result is frustrating. In 1876, when the catalog was comparatively small, its growth slow, and its entries less complex, Cutter was prone to think of "the catalog as a whole" as one alphabetical list of entries arranged like the dictionary, so that anyone who knew how to use a dictionary would ipso facto know how to use the dictionary catalog. By 1939, the much overgrown dictionary catalog had become a dense maze which baffled almost all its users, and the ALA Conference of that year, held in San Francisco, devoted a special meeting to this "Crisis in the Catalog."

Straight Alphabetical Filing. To cope with the situation, two solutions were adopted by some libraries and are followed with certain modifications. One solution was simply to ignore the heterogeneity of the different entries and arrange them all in one "straight alphabetical" order--word by word. Thus the entries under the word London--whether as the surname of a person followed by a forename, the name of a municipality (a corporate body) followed by that of a department or division, the name of a geographical area as a subject followed by various subject subdivisions, or the first word of a title of a book--would all be arranged uniformly and interfiled simply word by word, rather than having the entries of each of these types arranged separately in the catalog as they have been traditionally. The great argument in favor of this measure was that, under this arrangement, an unsophisticated person approaching the catalog for, say, the title London is London, would not be confused by the separate arrangements of the different types of entries under London before he discovered where the titles beginning with the word London began. But this difficulty of the unsophisticated catalog user could materially be alleviated by the use of effective guide cards which would lead him from London (Personal Name) to London (Municipality) to London (Place) and finally to London (Titles); while the interfiling of all these entries sacrifices a systematic arrangement essential to the effectiveness of the catalog and the needs of all its users, including the same unsophisticated user. The segregation of personal name entries (whether as author or subject entries) is helpful to the catalog user when his information about the person he seeks in the catalog is incomplete or inaccurate--as when he has the surname and initials only, or the surname and only one of the initials, or the surname with doubtful initials, etc. The separation of a corporate body with its subdivisions is important to one engaged in a study of that body or its activities and wishing to know what publications the library has by or about that body and any of its subdivisions. The separation of subject entries with their subdivisions is essential to all concerned with a certain subject, for only in seeing a full display of all aspects of the subject represented in the catalog can one determine which of these are most relevant to his purposes. When all these entries with their different kinds of subdivisions are interfiled simply word by word, regardless of the significance of the headings and their subdivisions, the purposes served by their traditional separation are unwittingly destroyed. To reduce the organization of the catalog to a simplistic "straight alphabetical" arrangement of the entries is, again, to ignore its multiple and complex requirements.

Horizontal Division of Catalog. The other solution, which was the subject of the meeting at San Francisco, was to divide the bulky and overgrown dictionary catalog and thus to reduce its complexity. Here, also, two possibilities of division were considered: a "horizontal" and a "vertical" one. By "horizontal" was meant a division of the catalog by date of publication of the materials. Taking cognizance of the fact that the prevailing number of catalog users seek recent materials, it was reasoned that if all entries bearing, say, the postwar imprint date of 1946 or later were segregated to form a separate "current" catalog, then each catalog would be considerably smaller and consequently less complex--particularly the "current" catalog, which would be the smaller of the two and the one used by most people. However, this method of division suffers from several important disadvantages. First, not all materials bear their date of publication, and many span a number of years--as serials and works issued in more than one volume. Second, to maintain such a divided catalog, it would obviously be necessary at intervals to change the dividing date and move the entries for the period changed from the "current" catalog into the non-current catalog. And third--and most important--this division would impair to a considerable extent the second objective of the catalog explained earlier by separating, in many cases, the earlier works of an author and the earlier editions and translations of a work from the later ones. A person in search of a particular work without any date in mind would often have to search both catalogs to determine what editions or translations the library had of that work, or--what is worse--only to learn that the work he wanted was not in the library; and the person in search of a particular work with a certain date in mind would often be misled to overlook the editions or translations in the other catalog which might be even more useful for his purposes. It will be noted also that this method is directed only at the factor of size of the catalog, but not at that of the complexity resulting from the interfiling of different types of entries requiring different patterns of arrangement.

Vertical Division of Catalog. By "vertical" division was meant a division of the entries of the catalog by their respective functions. This division was predicated on the fact that Cutter's "whole" dictionary catalog actually combined two distinct kinds of entries, produced by separate processes, and designed to serve different functions. The author and title entries--the product of descriptive cataloging--are designed to meet the objectives of descriptive cataloging discussed earlier, which are (1) to facilitate the location of a particular publication which the library has, and (2) to show what editions and translations the library has of a given work and what works it has of a given author. On the other hand, the subject entries--the product of subject cataloging--are designed to show what sources of information the library has on a particular subject and to call attention to related and more specific subjects which might also be relevant, or even more relevant, to the user's purposes. The difference of purpose and design between the author and title entries on the one hand and the subject entries on the other suggested that, if these entries were to be separated to form an author-and-title catalog and a subject catalog, then the effectiveness of each would be greatly increased for several reasons. First, each catalog would then be only about half the size of the dictionary catalog, and the reduction in size would itself reduce the complexity in each catalog. Second, since subject entries require a different and more complex arrangement than the author and title entries, their segregation would make the two distinct patterns of arrangement in the separate catalogs more comprehensible and helpful. And third, since the author and title entries and the subject entries serve distinct purposes, a separate author-and-title catalog would respond more readily and effectively to the needs of a person in search of a particular book, work, or author than does the dictionary catalog, where such an inquirer is continually and inevitably distracted by intervening subject entries; and the subject catalog would respond much more effectively to the needs of the person in search of sources of information on a given subject for similar reasons. In brief, the "vertical" division of the dictionary catalog contemplates a separation of the subject entries from the author and title entries to form two separate catalogs, an author-and-title catalog and a subject catalog, each about half the size of the dictionary catalog and correspondingly slower in growth, each more uniformly and comprehensibly arranged, and each more responsive to the particular needs it was designed to serve.

Of the foregoing three measures designed to reduce the complexity and optimize the effectiveness of the catalog, the "vertical" division is clearly the most rational and most promising solution. The "straight alphabetical filing" ignores completely the causes of the catalog's complexity and concerns itself only with its symptoms, and the measure actually aggravates rather than remedies the situation. The "horizontal" division takes cognizance of one of the factors of complexity--the size and growth of the catalog--but ignores the other and more important factor, the maze resulting from the incongruous superimposition of dissimilar patterns of arrangement of the author and title entries and the subject entries. The "vertical" division takes cognizance of both factors responsible for the complexity of the catalog and seeks a method of division which will produce not only smaller and slower growing but also more functional and comprehensibly arranged catalogs.

The "vertical" division has therefore been followed in a number of libraries in recent years--particularly where the catalog has been reproduced in book form. The Library of Congress' published book catalogs, among others, follow this division. Some have divided their catalogs further into _Authors_, _Titles_, and _Subjects_, which further reduces the size and complexity of each catalog; however, this further division is bound not to enhance, but rather detract from, the effective use of the catalog, because both the title and the author entries are often involved in the location of a work and the selection of an edition or translation, as already discussed before.

Nevertheless, the "vertical" division entails some annoying problems. One of them is due to the fact that the authors, works, and editions represented by the author and title entries are often themselves the subjects of other works written about them. In the dictionary catalog, the subject entries of these works naturally follow the author and title entries representing the authors, works, or editions, so that a person consulting the catalog for a particular author, work, or edition discovers at once also what books the library has about that author, work, or edition. But if the subject entries are separated and included in another catalog, this most valuable information will be lost to the user of the author-and-title catalog.

If this information is not to be lost in the vertically divided catalog, one of two things will be required. The subject entries involved--i.e. those under personal or corporate names, or under titles--might be duplicated and filed also in the author-and-title catalog following the entries representing these authors or works, in the same way as they appear in the dictionary catalog. This procedure would, however, complicate the process and increase the cost of cataloging, and would also contribute to the growth of the author-and-title catalog. Alternatively, references might be included under the authors' names and the titles in the author-and-title catalog to inform the user that material about these authors and works may be found in the subject catalog. This procedure would not be very costly and would not contribute significantly to the growth of the author-and-title catalog; but it would also be much less helpful to the catalog user, for he would then have to look for the material desired in another catalog, and the time and effort required to do so would often be discouraging. The minimum would be a conspicuous sign above the author-and-title catalog to call the user's attention to the fact that works about an author, work, or edition should be sought in the subject catalog; but this would also be of minimal value, for the number of such works is proportionately small and one would find himself too often looking in vain for material that does not exist or is not in the library.

Another related problem resulting from the separation of author and title entries from subject entries is due to the fact that author and title entries often function also as subject entries. The autobiographies, memoirs, letters, and similar records of individuals, and the annual and similar reports of activities of corporate bodies, are simultaneously both by and about these individuals and bodies. Other works are also frequently issued with valuable introductory matter about the author or the work. In the dictionary catalog, where the author and title entries as well as the subject entries about the authors and the works appear at the same place, it has not been deemed necessary in such cases to make under the same name or title both author or title entries and subject entries. The person in search of material about a particular author or work was not expected to overlook the other entries under that author or title, or fail to recognize their subject value. In a vertically divided catalog, however, all such materials would require also subject entries for the subject catalog--which, again, would increase the cost as well as the growth of the catalogs.

Modified Vertical Division. These two problems indicate the close relationship that exists between author and title entries representing authors and works and the subject entries about these authors and works. The recognition of this relationship suggests an important modification which would obviate the difficulties attending the vertical division. The modification suggested is a division based not on the function but on the character of the entries. Name entries (i.e. entries under personal or corporate names, whether as authors or subjects) and title entries (i.e. entries under titles of works, whether representing these works or as subjects of works about them) would go into a name-and-title catalog, with a conspicuous sign used to explain its scope. All other subject entries would go into a topical catalog. This method would seem to combine the advantages of both the dictionary and the divided catalog and be free of the disadvantages of either.

There is one special problem, however, that would arise in this kind of a division--one which is due to a cataloging ambiguity confusing the name of a country, state, city, etc., as a geographical area with that of its government as a corporate body. In the subject heading France--Foreign relations, the name France obviously refers to the government of France as a corporate body maintaining relations with other governments; but in the heading France--Description and travel, the name France clearly refers to the country as a geographical area. In the dictionary catalog and the author-and-title and subject catalogs, this ambiguity presents no problem and has certain advantages: many or most works about a country deal with it both as an area of life and activity as well as a political entity; and the distinction between the two would not be readily recognized by or helpful to most users of the catalog. But in a name-and-title catalog, which includes also subject entries relating to individuals, corporate bodies, and works, but not other subject entries, it would seem necessary to distinguish between subject headings relating to the name of a country as a political body and those relating to it as a geographical, economic, historical, or other area, and to file the former in the name-and-title catalog and the latter in the topical catalog. But to make such a distinction would not be very easy or practical, for the reasons already noted. It is suggested that, despite any apparent inconsistency, it would be most practical to treat all subject entries under names of countries, states, cities, etc. as relating collectively to various aspects of life of these areas, including, but not limited to, their governments, except when these names are followed by those of departments or divisions, in which case they could not be construed otherwise than as corporate bodies. References under the names of these countries, states, cities, etc. in each catalog to the materials that may be found in the other catalog about these places will further serve to guide the catalog user.

Alternatively, all subject entries under the name of a country, state, city, etc. might be included in the name-and-title catalog, with an appropriate reference under that name in the topical catalog. But this alternative is less satisfactory, for it leads to a further question: If the subject entries under the name of a country, state, or city are all to be included in the name-and-title catalog as corporate name entries, where are the subject entries under the name of an unincorporated geographical area, which could not be construed as a corporate body, to be located? If they were not to be located in the name-and-title catalog, because the name of such an area could not be conceived as a corporate name, the result would be such that the subject entries under California would be found in the name-and-title catalog, but those relating to Southern California or Northern California, which are unincorporated regions, would be in the topical catalog. Such a separation of subject entries relating to incorporated areas from those relating to unincorporated ones would, again, complicate the process of cataloging and would scarcely be helpful to the catalog user. On the other hand, if all subject entries under geographical names were to be included in the name-and-title catalog, the ideological basis of the division (a name-and-title catalog for those concerned with a particular person or corporate body as author or subject, or with a particular work or any information about it; and a topical catalog for those in need of information on any other subject) and the practical objectives sought (to reduce the size of each catalog and make its organization more comprehensible by separating name and title entries from subject entries requiring different patterns of arrangement) will be substantially nullified.

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The foregoing discussion indicates the problems involved in the division of the dictionary catalog or in the development of a divided catalog, and the considerations that should be weighed and balanced in deciding on what pattern of organization to adopt or adapt. It will be apparent that none of the forms of catalog division considered is perfect. It would, however, be a mistake to conclude that, under the circumstances, no solution is better than an imperfect solution to the problem of the bulky and complex dictionary catalog. The division of the dictionary catalog appears increasingly inevitable.

Special Catalogs and Their Integration. The use of special catalogs for special materials came into being prior to and independent of any concern about the luxuriant growth and density of the monolithic dictionary catalog, and was not intended as any solution to that problem. Rather, it came into being as part of a recognized need to provide special custody and service for certain materials. When a library decided to establish special departments for the administration and service of its manuscripts, maps, music, or pictorial arts, it naturally had to provide special catalogs of these materials for the staff and users of these departments.

But the provision of special catalogs, alone, would cause these departments to function as so many separate special libraries, not as parts of one integrated library. They would serve only those coming to these departments specifically for their special materials, but not all other users who came to the library generally for the works it may have by a particular author or on a particular subject. These will normally limit themselves to the general catalog, for they would find it extravagantly time-consuming to have to consult also all special catalogs on the mere chance that they might find there some additional and valuable material. If all library users are to benefit of the holdings of the special departments, the special catalogs will need to be integrated with the general catalogs. This can be done in one of two ways. One is to duplicate the entries of all the special catalogs in the general catalog, so that a person consulting the general catalog will find there all the library has by a particular author or on a particular subject, regardless of the character of the material and its location in the general or special collections. However, again, this duplication of the entries will be costly and will increase the growth of the general catalog. Another way is to make for the general catalog references under each author and subject represented in the special catalogs to inform the user of the general catalog that additional materials by that author or on that subject may be found listed in the special catalogs indicated. This method is economical both in cost and in space of the catalog, and will tell the user of the general catalog when, where, and what kind of additional material he may find listed in the special catalogs. Such an integration of special catalogs with the general catalog of a library is thus another aspect of catalog organization.

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POTENTIALITIES OF AUTOMATION

The preparation of the library's catalogs includes three operations: (1) cataloging--which is the composition of the required entries and references that form the library's general and special catalogs; (2) filing--which is the proper arrangement of the entries and references within each catalog; and (3) reproduction from the entries and references of the desired catalogs, and maintenance of these catalogs. Of these, cataloging is largely an intellectual operation, involving the gathering and organization of information regarding the materials in the library; filing is a semi-professional activity, involving the assembly of entries in accordance with rules prescribing patterns designed to enhance the effectiveness of the catalogs; and the last is a technical operation, involving methods of reproduction or printing. It was natural, therefore, that automation of the library's catalogs should begin with the technical aspect of the catalogs--that of their reproduction and maintenance. But the potentialities of automation are inevitably bound to extend also to the operation of filing and ultimately to the process of cataloging itself.

Reproduction and Maintenance of Catalog. The catalog of a library may be described as a bank of data relating to the materials in the library's possession, organized so as to help an inquirer determine whether or not the library has a particular item (book or other document), what editions and translations it has of a particular work, what works it has of a particular author, and what materials it has on a particular subject. To accomplish these purposes, each item in the library is represented in the catalog by a "main" entry which includes the names of the author, editor, translator, and others associated with its production; the title, edition statement, publisher, and place and date of publication by which the materials of a library are normally identified; a description of the physical makeup of the item--including the number of volumes or pages, illustrations, maps, and other features which help to characterize it; notes on its relation to other editions or works; and a list of the names, titles, and subject headings under which "added" entries are to be made and filed in the catalog, in addition to the "main" entry, in order to facilitate the location of the item or to relate it to other materials with which it is affiliated by origin or content.

The realization of the extraordinary capacity of the computer to manipulate and correlate data early suggested that, if the main entries just described were to be stored in the memory of a computer, with their individual elements identified by codes, it would then be possible to program the computer to generate from the main entries all the desired added entries and to reproduce from the main entries alone all the desired general and special catalogs, or brief lists, by any one of the characteristics noted in the main entries or added to them--as by author, type of author (e.g., government agencies), title, subject, language, place or period of publication--or by any combination of characteristics--as a list of materials on a given subject or combination of subjects, by a certain type of author, in a given language, published in a given place and given period of time, and including illustrations or maps. These potentialities have now already been demonstrated by the Library of Congress MARC project and by a number of libraries which have computerized the production of their catalogs. The ultimate development envisioned is a national bank of bibliographic data which every important library in the country could consult directly to locate materials of a desired description found anywhere in the country. Potentially, such a national bank might also include similar information on materials found in the form of individual essays or periodical articles, and supply abstracts of the materials desired--as do now some specialized services such as MEDLARS, Chemical Abstracts, and others.

In addition to the production of catalogs, the potentialities of automation are important also to the maintenance of these catalogs. The problem of catalog maintenance stems from the fact that the conditions with which the catalogs are concerned are always subject to change and often do change, thus requiring corresponding changes in the catalogs; but effecting the changes required has been costly and time-consuming, and has caused the catalogs to lag chronically out-of-date. The names of authors, the titles of works, and the terms used to designate subjects are all subject to change and often change; but the change of a name or a subject heading in a catalog entails changing not only the headings of the entries bearing that name or subject heading, but also of the "tracings" on at least all the main entries including them and scattered throughout the catalog, and of all the references to and from that name or subject heading. It is because of this practical difficulty of keeping the subject terminology of the catalog up-to-date that the subject aspect of our catalogs has acquired a reputation of being notoriously obsolescent--that books on "home economics" appeared until fairly recently under Domestic Economy in our catalog, that works on Latin America were to be found until a few years ago under Spanish America, and that materials on airplanes still appear under the heading Aeroplanes. It is also because of this difficulty of making changes in the catalog that some of the most important results of the recent revision of the cataloging rules had regrettably been compromised to avoid costly changes. The capacity of the computer to update the data stored in it is thus of great value to the maintenance of the catalog and to future progress in cataloging, and is an important advantage of the automated catalog.

In view of these potentialities, it is especially important to emphasize that the effectiveness and value of the results of automation will ultimately depend on the adequacy and quality of the cataloging input, and that an indifferent or inferior input will undo much of the promise of automation. The importance of a well rationalized cataloging methodology and of sound cataloging principles and practice is thus greatly increased by the prospects of automation.

Filing. Since the headings of the entries of the catalog--which are names, titles, and subject headings--normally consist of words, the basic arrangement of the catalog is naturally alphabetical. But the alphabetical arrangement has important limitations that must be recognized. There are cases where the alphabetical order cannot practically be followed, and others where the alphabetical order is inapplicable or insufficient. Typical examples of the cases where the alphabetical order cannot strictly be followed are most entries beginning with the article--as The, Der, Le, La--which obviously could not be considered in filing for practical reasons and is almost universally ignored. What complicates the problem, however, are the facts that (1) the article as part of a personal name is often treated as an organic part of the name which cannot be ignored in filing--as in La Fontaine; (2) the same word may be an article in one language and a noun in another--as the in English and thé in French; (3) even the same word in the same language may sometimes function as an article and sometimes as another part of speech--as ein or eine in German. Another example of words which cannot be, and customarily are not, considered in filing is the title preceding the forename of a person--as in Churchill, Sir Winston. Examples of cases where the alphabetical arrangement is inapplicable, insufficient, or inappropriate are such entries as (1) those beginning with numerical or other symbols rather than words--as the title 8 mm Magazine, (2) those where the same heading may designate a person, a corporate body, a place, a title, etc.--as discussed above under the heading "Straight

Alphabetical Filing;" and (3) those whose subject heading is subdivided by different types of subdivisions--as by type of material, by place, by aspect of the subject, etc.--and where their indiscriminate alphabetical arrangement would make a meaningful survey of the library's resources on the subject, and a relevant selection from them, very difficult or impossible. It is conditions of this kind that have given rise to the development of complex filing rules, such as those of the Library of Congress and of the American Library Association, in addition to the cataloging rules. It should be apparent, therefore, that if the operation of filing is to be automated, it will be necessary to analyze first in detail the underlying problems, and then to devise methods of dealing with them. It is possible that in some cases the design of the entry might be modified to solve a filing problem--as in the entry U.S. 89th Congress, 1st session, which is to be filed as if written U.S. Congress, 89th, session, 1st--but this is not to be done without proper circumspection and regard for customary forms. In other cases it will be found that the filing problem is the result of a faulty methodology which should be remedied for its own sake--as in filing subject entries with different types of subdivisions. The use of the same dash for subdivision by type of material, by place, by aspect of the subject, etc.--as in Education--Abstracts, Education--Bibliography, Education--Dictionaries, Education--Periodicals, Education--Statistics, Education--Yearbooks, etc.; Education--Australia, Education--Belgium, Education--Canada, Education--France, Education--Germany, Education--U.S., etc.; Education--Aims and Objectives, Education--Curricula, Education--Finance, Education--Standards, etc.--is a source of confusion for the filer as well as the user of the catalog, whether automated or not. This is a case of bad methodology which cries for improvement on its own demerits; but recognition of the cause of the problem will also point the way to an appropriate solution. If, for example, the foregoing three types of subdivision were designated respectively by period, colon, and dash--as Education. Abstracts, Education. Bibliography, Education. Yearbooks, etc.; Education: Australia, Education: Canada, Education: U.S., etc.; Education--Curricula, Education--Finance, Education--Standards, etc.--then both the filers as well as the users of the catalogs would be guided by the different symbols in the location of particular subdivisions. And the use of different symbols to designate the different types of subdivision would also provide the basis for a program to automate the arrangement of subject entries.

However, in addition to any possible modifications in the design of some types of headings and any improvement in the designation of the different types of subdivisions, automation of the arrangement of the entries would seem to require inevitably a program providing for the omission of designated words in the arrangement of all entries, and for the arrangement of designated graphic symbols as certain specified words. The development of a detailed and effective method to automate the arrangement of the entries will require a special study and experimentation, but the result is essential to the successful automation of the catalog.

Cataloging. The potentialities of automation for the reproduction and maintenance of the library's catalogs are no longer a matter of conjecture. They are now being observed and experimented with by a number of libraries using the Library of Congress MARC tapes. But these tapes, and those prepared by other libraries which have computerized the reproduction of their catalogs, are generally based on the same main entries on which the non-automated catalogs are based. That is to say, the cataloging process itself--the determination of the main and added entries, the contents and design of the entries, the methods used to identify an author, a work, or a subject, the methods used to relate authors, works, and subjects, etc.--has so far remained unaffected by automation of the catalog. The automation process begins after the cataloging process ends, and neither affects the character of the other. But the potentialities of automation for the cataloging process itself are also foreseeable and warrant serious consideration.

To deal systematically with this question, it would seem necessary to begin with a reexamination of the traditional purposes of the catalog in the light of the now available potentialities of the computer--to see whether all of these purposes are still valid, or whether any should under the new circumstances be omitted, modified, or added. Next it would seem necessary to reexamine the problems presented by the materials cataloged in light of the purposes reconsidered. And finally, with the purposes and problems in mind, each of the traditional methods prescribed by the governing cataloging rules could be reevaluated in light of the potentialities of the computer and changed or modified as may appear desirable.

As an example of this approach, take the rule prescribing that an author should be identified in the catalog by the name by which he is most commonly identified in his works, with references from the other names used by him. This rule is traceable to the objective that the catalog is to show what works the library has by a particular author. To accomplish this purpose effectively, all the works of an author must be entered in the catalog under one particular name. The materials representing his works, however, may bear different names or different forms of his name used by him at different times. Hence the problem of choice of name by which an author should be identified in the catalog. The choice prescribed by the rule is the name by which the author is bound to be best known to his readers and under which they are likely to look for him most frequently in the catalog. The rule is thus well intentioned, but the criterion is not one easy to establish and apply, and additional rules are required to provide for the various cases when this criterion cannot be applied. Now, with the purpose of the rule and the problem behind it in mind, we can ask ourselves whether the solution prescribed by the rule would still be required in case of a computerized catalog. And a little reflection on the question is bound to lead one to the conclusion that the answer will depend on the type of computerization contemplated. If the computer is to be used merely as an instrument of reproduction and maintenance of the catalog, as it is now generally used where the catalog has been computerized, then there is no conceivable reason why the method of reproduction of the catalog should in any way affect the merits of the solution prescribed by the existing rules. However, if the catalog is not to be printed out but stored in the computer on-line and consulted via the computer, then it will be found that the objective of the rule could be accomplished more easily and simply by identifying the different names and pseudonyms used by an author as designating the same author and devising a program by means of which an inquiry for the works of an author by any one of his names will produce a listing of all his works published under the different names. The gain achieved in this way would be a material simplification of the process of cataloging resulting from elimination of the problem of choice of name by which an author is to be identified in the catalog. Similarly, the establishment of a subject heading often involves the problem of choice of one of several terms by which the subject is or has been designated. In an on-line catalog this problem of choice can likewise be obviated by simply linking the various terms as designating the same subject and providing a program to elicit the response desired to any one of these terms. The ongoing studies on man-machine "dialogues" are pertinent to the problem of the implications of automation for the cataloging process itself.

In considering these implications and weighing possible changes in existing cataloging methodology, however, it is very important to make sure that the purposes behind the existing rules or methods and the problems involved are fully understood. This advice seems to be called for by the fact that some notions abroad about the implications of automation for the cataloging process are clearly based on misconceptions of the purposes or the problems behind some of the rules. One example of such misconceptions, involving abandonment of the main entry in a computerized catalog, is cited in the next section under the heading "Misconceptions of Bibliographic Cataloging."

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BIBLIOGRAPHIC DIMENSIONS IN INFORMATION CONTROL*

Books and Information

The records of man's thought and experience stored in libraries, mostly though not exclusively in the form of books, have traditionally been viewed as presenting two aspects involving two distinct problems: First, how are they, as concrete entities, to be individually identified and entered in a catalog so that they could readily be found when needed; and Second, how are they, as sources of information on various subjects, to be characterized and related so that they could be found by those in search of the information desired. The first question naturally led to the use of author and title entries alphabetically arranged, thus creating the original "alphabetical catalog" now commonly referred to as the "author-and-title catalog"; and the second question led to the formulation of "subject headings" and the use of subject entries to form a "subject catalog". This situation early gave rise to the issue of which of the two catalogs was more essential to the library user, and the arguments on both sides reverberated loudly at the hearings held by a Royal Commission in London, in 1847-1849, on the alphabetical catalog designed by Panizzi for the library of the British Museum(1). It was apparent that neither catalog was, alone, quite sufficient, that both catalogs were needed to serve their respective purposes, but that the alphabetical catalog was more urgently needed to serve the elemental function of a library--which is to be able to tell whether or not it has a particular book. As one of the witnesses at the hearings commented: "I think the first object of a catalogue is that persons going to consult it, if they have an accurate knowledge of the title of the book they want, may be able to find it at once in the catalogue . . . But, for those who know not the exact title of a book, it would be very desirable to have it placed [also] under the subject to which it relates and then to refer by a cross-reference to the title of the book."(2) Twenty-five years later, Charles Ammi Cutter, viewing the two catalogs as parts of "the catalog as a whole," provided rules for their integration into one "dictionary" catalog;(3) but the result appeared as little more than a mere alphabetical interfiling of the author and title entries with the subject entries rather than involving any interrelation between them, and the standard cataloging rules subsequently issued were expressly limited to the entry of publications by author and title as a distinct problem (e.g., Catalog Rules: Author and Title Entries, 1908; A.L.A. Cataloging Rules for Author and Title Entries, 1949). It is quite understandable, therefore, that those concerned with the problem of information should have regarded the problem of "descriptive" cataloging as irrelevant to their purposes and should have taken little notice of the important revision of the cataloging rules which has taken place in the past fifteen years(4) and has culminated in an International Conference on Cataloging Principles (1961)(5) and a new code of Anglo-American Cataloging Rules (1967)(6).

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The Book and the Work

But the notion of "cataloging" and "cataloging rules" as concerned merely with the description of the physical book, or record--a notion undoubtedly sustained much too long by the ambiguous term "descriptive cataloging" often used to distinguish it from subject cataloging--has undergone a profound change and has come to assume a character which makes it very pertinent and of increasing importance to the problem of information control.

The essence of the modern concept of cataloging, which might more appropriately be called "bibliographic cataloging," has gradually emerged from a growing realization of the fact that the book (i.e., the material record) and the work (i.e., the intellectual product embodied in it) are not coterminous; that, in cataloging, the medium is not to be taken as synonymous with the message; that the book is actually only one representation of a certain work which may be found in a given library or system of libraries in different media (as books, manuscripts, films, phonorecords, punched and magnetic tapes, braille), different forms (as editions, translations, versions), and even under different titles; that a library user may need a particular edition cited, or may do with any available edition or translation of the work, or may need to know what editions and translations of the work the library has so that he could select the one or ones which would best suit his needs (as earliest, latest, illustrated, well edited, original, or translation in a language he knows); that, to serve all these purposes, a book must be treated not only as a particular publication, but also as the representation of a particular work by a particular author, so that the catalog will reveal to an inquirer not only whether a particular *book* is in the library but also what editions and translations of a particular *work* the library has and what works it has of a particular author; and, finally, that failure to do so will obviously minimize the potential value of the library to its users.

The meaning of the last point is illustrated in the observations of a reviewer commenting on a recent bibliography of translations. In that bibliography, the publications appear to be treated only as such, and not as representations of particular *works*, with the result that "the same work appears under several titles, for example, Gogol's *Šinel* which shows up as 'The Cloak,' 'The Greatcoat,' 'The Mantle,' and 'The Overcoat.' . . ." all interfiled alphabetically with other publications representing different works. The reviewer then goes on to consider the consequences: "let us imagine that the user of this bibliography is looking for translations of Chekhov's short story Gore. After having gone through seventeen pages of tightly printed listings, he will have come up with a long list of titles, such as 'Heartache,' 'Misery,' 'Trouble,' 'The Lament,' 'In Trouble,' 'Woe,' 'A Misfortune,' 'A Bad Business,' 'Sorrow,' 'Grief,' etc., each of which might well be a translation of *Gore*. But he will not know which of these titles actually do represent *Gore* . . . nor if he has found all of the translations of *Gore*."(7) An awareness of the distinction between *books* and the *works* embodied in them, or of the problems and principles of bibliographic cataloging, would have caused the bibliographer to avoid such consequences.

Author and Work as Subjects

The treatment of a publication as the representation of a particular work by a particular author implies three levels of identification--of the publication itself, of the work represented by it, and of the author of the work. This lends the catalog bibliographic dimensions only sporadically provided by the former cataloging rules. But these dimensions are important not only to the effective control of the books and the works in the library, but also to that of the information contained in them. To illustrate, assume a reader is in search of information about the life and work of Sir Isaac Newton. This reader, in a research library, would reasonably expect to find there both some of Newton's own works and some works about him. He would also be aware, or advised, that some of the editions of Newton's works might include valuable bibliographical, historical, and critical information about him not found elsewhere--that is, that the editions of an author's works are often also valuable sources of information about him. With this in mind, he will undoubtedly want to know both what works of Newton and what works about him the library has. Proceeding now to the author-and-title catalog, he will readily find under Newton, Sir Isaac a list of all of the editions of his works which the library has, including those in which the name Isaac appears as Isaak and Newton as Neuton, because the importance of identifying an author--or other person or corporate body--by one particular name and by only one form of the name has long been recognized and followed in cataloging. By the same token, he will find in the subject catalog, under the same form of name, a list of all the works which the library has about Newton. But if in the course of his study our reader's attention were directed specifically to Newton's *Principia* and he wanted to see some of the editions of this particular work and some other works about it which the library has, then he would find obstacles in his way, because the identification of a *work* has not been recognized and has not been followed under the former cataloging rules (except in certain cases specifically provided--as in the so-called "anonymous classics," e.g., "Bible"). Thus, in returning to the author-and-title catalog, he might or might not find under Newton's name an edition entitled *Principia*, and in either case he would not discover what editions or translations of this work the library had unless he had the perspicacity and tenacity to examine all the entries under Newton's name. Only then would he have found *The First Three Sections of Newton's Principia* under *F*, *The Mathematical Principles of Natural Philosophy* under *M*, *Philosophiae naturalis principia mathematica* under *Ph*, *Principia: The Mathematical Principles of Natural Philosophy* under *Pr*, and *The Three First Sections . . . of Newton's Principia* under *T*, interfiled with such unrelated titles as *Arithmetica universalis*, *Interpolation Tables*, *Lettres inedites*, *Opticks*, *Opuscula mathematica*, *Tables for Renewing and Purchasing Leases*, and *Universal Arithmetick*(8). (Note also the separation of *The First Three Sections of Newton's Principia* and *The Three First Sections . . . of Newton's Principia*, of his *Arithmetica universalis* and *Universal Arithmetick*). Under the circumstances, one would rationally be at a complete loss about how to find, in the subject catalog, any materials about this variously named work of Newton. This is, of course, analogous to the situation described by the above-mentioned reviewer in trying to locate the translations of Checkhov's *Gore* (a situation which, ironically, might well be described by this title including all the connotations of "Trouble" and "Grief"). It is the consequence of failure to recognize the identity of a work which may be embodied in different publications under different titles and to provide appropriately for such identification. Under the new cataloging rules, all the editions and translations of Newton's Principia would be represented as such, thusly:

Newton, Sir Isaac

[Principia] Philosophiae naturalis principia mathematica . . .

[Principia. English] The mathematical principles of natural philosophy . . .

[Principia. French] Principes mathématiques de la philosophie naturelle . . .

[Principia. 1-3] The first three sections of Newton's Principia . .

[Principia. 1-3] The three first sections . . . of Newton's Principia . . .

Etc.

And, accordingly, the materials about this work would logically be found, in the subject catalog, under the heading Newton, Sir Isaac. Principia.

Misconceptions of Bibliographic Cataloging

Despite the extensive discussions which accompanied the revision of the former A. L. A. Cataloging Rules and the development of the new Anglo-American Cataloging Rules, the essential character of the new concept of bibliographic cataloging and its implications for the systematic structure and effectiveness of both the author-and-title catalog and the subject catalog remain deplorably malunderstood. Some of those concerned with the problem of information in the library appear incredibly oblivious of the fact that information is found in the library not in any abstract form of "information" as such, but only as embodied in the works represented by books and other materials, and that these materials must therefore necessarily and properly be considered as an organic part of the problem of information. One such individual claims that "The over-emphasis on authorship in our bibliographical apparatus obscures both the fact that libraries are essentially institutions for the preservation of thought processes and the fact that the value of these thought processes is independent from the form in which they appear and from the individuals who create them."(9) Apart from the dubious validity of the assertion that the value of "thought processes"--which presumably means ideas or information does not depend on the reputation of their authors or editiors, this writer simply ignores the fact that libraries actually do not deal in any abstract "thought processes," but in records representing the works of men, and it is these records that libraries must buy, preserve, catalog, and make available to their users. Nor does this writer indicate how libraries might tangibly handle "thought processes"--a consideration which led another student of the problem of information to say that the problem "stems, as we know, from the insubstantiality of information, and is not lessened by our obstinate refusal to admit that all we are able to organize are the documents that house the information."(10) Others appear disposed to belittle "cataloging" as a low-level form of indexing. "The methods used in indexing range from the relatively straight-forward system of providing bibliographic data, well described by conventional library rules, to more sophisticated attempts to establish dictionaries and other hierarchical systems which . . . will lead the person to the desired information."(11) But as the foregoing and the following may indicate, the bibliographic and subject systems in use represent, not a range of sophistication, but a range of purposes to be served, either of which may be "straight-forward" or "sophisticated" depending on the competence and skill of the practitioner. And most continue to confuse the book with the work and regard the library catalog as merely a list of books, or publications, by author, title, and subject. Thus one may find in a paper delivered at a recent Institute on the "book catalog"--that is, the catalog printed in book form--that "A catalog should be designed to answer questions as to what books [italics added] are in the library--questions of physical accessibility."(12) Although earlier in that paper the author speaks of "individual works," there is nothing to indicate an awareness of any distinction between the "books" and the "works," or of the implications of such distinction for the functions which the catalog should be designed to serve. Likewise, in the last paper of that Institute, one is told that "Possibly the simplest and most frequent type of library request is that for a particular book or work [italics added] identified by title, author, or other descriptive bibliographic information."(13) The intended symonymity of "book" and "work" is here further confirmed by an inscription, under a key of an illustrated computer console, which reads:

> Specific Work
>
> For requesting a specific book, journal,
> or report by means of author, title, publisher,
> or other descriptive (non-subject) information.(14)

Nowhere in these papers is there any apparent concern about the work as distinct from the book.

Failure to understand fully the purposes and principles of bibliographic cataloging has also led, more recently, to the notion that use of the computer in the production of the catalog makes the traditional method of cataloging, employing a "main entry," now obsolete.(15) That is, instead of having the cataloger always decide whether the "main entry" for a given publication is to be under author, title, or other heading--a decision requiring knowledge of the cataloging rules and principles as well as discrimination in their application--a basic entry would simply be made under the title of the publication, and this entry would then automatically be provided by the computer with the indicated author, subject, and other headings to form the desired catalog entries. The idea appears irresistibly attractive and promising of the long yearned-for simplication of bibliographic cataloging--and has indeed been urged on other occasions before(16) and used in some cases(17)--but it ignores the basic function of the "main entry" as the nucleus of the catalog.(18) For when the main entry is designed to represent a publication as an edition of a particular work by a particular author, the result is that the added entries under the subject and other added headings will similarly be related; but if the basic entry is to be under the title of the publication, the entries under a given subject heading will be indiscriminately arranged alphabetically by the wording of their titles rather than their intrinsic interrelation. This has already been noted by one library where the idea was adopted(19) and where it was observed that, as a result, one will find under the heading Symphonies, in the subject catalog, not an arrangement of the symphonies by composer and composition (i.e., author and work)--as any rational approach would appear to warrant--but of titles of publications such as Four Complete Symphonies . . . under F, The Great Symphonies of . . . under G, The Nine Symphonies of . . . under N, and then Symphonia . . ., Symphonie . . ., Symphonies . . ., Symphony no. . . ., Symphony in . . ., Symphony of . . ., Symphony on . . ., Synfoni . . ., and other variations of such titles, regardless of the works and the composers represented by them.

Bibliographic Problems in Information Control

The foregoing illustrates the relevance of the problems and principles of bibliographic cataloging to those of information control. There is, however, at least one important method of information control whose problems are entirely the same as those of bibliographic cataloging. This is the method which employs authors and works symbolically as "subject headings" to designate the subject fields or ideas represented by them and to relate the sources in which the authors and the works are cited--as is done in the _Science Citation Index_. Here, as is explained, "The searcher starts with a reference or an author he has identified . . . then enters the _Citation Index_ section and searches for _that particular author's name_ [italics added]. When he locates the author's name, he then checks to see which of several possible references fits the particular one that he is interested in. Under the year, journal, volume and page number of this particular reference, he then looks to see who has currently cited _this particular work_"(20) [italics added]. But if the _Index_ is to be a dependable and effective guide to the sources in which a "particular author" or a "particular work" is cited, then obviously the authors and works listed in it must be adequately and _unambiguously_ identified--as they are required to be in bibliographic cataloging. But are they so treated in the _Index_? One might assume from the foregoing quotation emphasizing "that particular author's name" and "this particular work" that this was the intention; but if that was the case, the methodology adopted here was ill calculated to accomplish the desired ends. The identification of an author by the surname and initials cited is inevitably bound to separate references to the same author, when he is variantly cited, and to confuse references to different authors having the same surname and initials; and identification of a _work_ by the source in which it appeared is inevitably bound to separate references to a work which appeared, with or without modifications, in more than one source. The combination of the two factors scarcely promises to make the pursuit of sources related to a "particular author" or a "particular work"--the declared objectives of the *Index*--a successful experience.

To confirm this conclusion, a member of the research staff of the University of California Institute of Library Research, Mrs. Nancy Brault, was asked to verify some names and citations of the *Science Citation Index*. Picking up a copy of the 1966 cumulation, she turned to the name Gibbs as a name which is neither very common (like Smith) nor very uncommon, and from the citations found in columns 7105-7109 she selected the names Gibbs (without initials), Gibbs A, Gibbs A J, Gibbs C J, Gibbs F, Gibbs F A, and Gibbs J W. She then went to some of the sources cited for a more adequate identification of the authors and their works, and returned with the following telling results:

1. Two of the works cited under Gibbs (without initials) belong to two different authors. The author of *65-J Chem Phys 43 139* will be found to be Julian H. Gibbs, who is listed also under Gibbs J H as author of *54-J Chem Phys 22 1460*, *55-J Phys Chem 59 644*, *58-J Chem Phys 28 373*, and others; and the author of *76-T Connecticut Acad 3 343* will be found to be Josiah Willard Gibbs, who is listed also as Gibbs J W where the same item and other items are cited (see below).

2. Gibbs A the author of *53-Parasitology 43 143* will be found to be Alfred J. Gibbs, who is listed also under Gibbs A J as author of *59-Parasitology 49 411*; at the same time it will be found that other items listed under each of these two names belong to different authors, active in different fields, and associated with different institutions.

3. Gibbs C J author of *65-J Water PC 37 1417* will be found to be Charles *V* Gibbs, not C J Gibbs. A misprint or error in the citing article *J Water PC 38 685* entailed a misplacement of this author and his confusion with other authors. At the same time, there is nothing under Gibbs C V where one would look for him.

4. Gibbs F and Gibbs F A will be found to be the same author, Frederic Andrews Gibbs. Some items will be found under one name, some under the other, and some under both of these names; in addition, some items will be found represented, under one or both of these names, under as many as 4 and 6 variant citations (e.g., *50-Atlas Electroencepha*, *50-Atals [!] Electroencepha 1*, *50-Atlas EEG 1*, and *50-Atlas Electroencepha 1* under Gibbs F A, all referring to the author's *Atlas of Electroencephalography*, 2nd edition, vol. 1, published in 1950; *64-Atlas EEG*, *64-Atlas Electroencepha 3*, under Gibbs F, and *Atlas 3*, *64-Atlas EEG 3*, *64-Atlas Electroencepha 2* [i.e., 3], and *64-Atlas Electroencepha 3*, under Gibbs F A, all six referring to vol. 3 of the above work published in 1964.)

5. Gibbs J W will be found to be Josiah Willard Gibbs who, as already noted before, is one of the authors listed also under Gibbs (without initials). The principal interest in this case, however, is the fact that the entries under this name illustrate how reproductions of a "particular work," identified as they are in the *Index* by source of publication, may appear in it as so many different works. J. W. Gibbs' writings, which first appeared in scientific periodicals, were later collected and republished in 1906 and 1961 under the title *The Scientific Papers of J. Willard Gibbs*, and in 1928, 1948, and 1957 under the title *The Collected*

Works of J. Willard Gibbs. Any one of the author's papers may therefore be cited as found in any or all of these sources without indication that they represent the same work. Thus his paper "On the Equilibrium of Heterogeneous Substances" will be found cited as Collected Works 1 300, 06-Scientific Papers 1 219, 28-Collected Works 1 219, 48-Collected Works 1 219, 75-Conn Acad Sci T 3 108, 75-T Connecticut Acad 3 108, 76-T Conn Acad 3 108, and so on. One will also note that here, as in the foregoing paragraph, variations in the citation of the source (Conn Acad Sci T, T Connecticut Acad, T Conn Acad) serve further to separate the references and cap the confusion. If these conditions, found in a small sampling of entries, under a few ordinary names, in the space of not more than four columns of only one year's cumulation, are any indication of the bibliographic conditions obtaining generally in the Index, it is difficult to see how a person interested in the subject field or the ideas represented by a certain author or certain work can effectively use the Index to locate the sources related to "that particular author" or "this particular work." Perhaps even more significant would be the effects of these conditions upon studies which by their nature, depend upon the identification of "particular works by particular authors," such as the use of citations to identify families of papers.(21)(22)

This is not intended, and is not to be construed, as a criticism of the Science Citation Index--a valiant and useful undertaking where economic and other practical considerations dictate a course of action not conducive to ideal results. It is adduced, however, as a prime example of an important method of subject or information control, the problems of which are entirely the same as those of bibliographic cataloging and therefore ones that could benefit from the solutions evolved in bibliographic cataloging.

Epitome

The "information" found in the materials of a library is not in the form of nuggets that can be collected, sorted, and labeled in isolation. Rather, it is part of the collective work and thought of men, and of the fabric of the particular works in which it is found. It is pertinent, therefore, that in organizing this information cognizance should be taken of the authors who created it, the particular works of which it is an organic part, and the materials embodying these works. Together, the authors, the works, and the materials, may be said to constitute the determinant dimensions of the information found in bibliographical sources.

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